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10 CENTS

Brownlow Road Bill in Congress Again.

AMONG the measures introduced and discussed in the last Congress, which have come up again in this, the Brownlow Bill for National Aid in Road Building has special claims on the support of motorists and all others who are anxious that this country should have as many good roads as consistent with its wealth, area and population. Congressman Brownlow of Tennessee, the father of the bill, reintroduced it November 19 in slightly revised form. He thinks it is possible to secure its passage by this Congress, and the remarkable growth of favorable sentiment indicates that his hopes may be realized. It is certain that the principle involved will have powerful aid in the House. Many members from different sections of the country stand ready to support it, notably from the South and West. The bill is also likely to receive strong support from the Pennsylvania, New Jersey, New York and New England delegations. This section of the country not only has the best improved roads, but has had most experience with the principle and practice of co-operation in road building as embodied in the State-aid plan. It is believed that the representatives from this section will favor National aid, which is only a more general application of the principle of State aid. It is certain also that the measure will have active championship in the Senate. It is difficult to see how Congress can avoid taking up the good roads question if the rural free mail delivery is to be extended. Already the people of many districts are muttering because extension of the free delivery system has been refused to them. The advocates of national aid to road improvement claim that much more can be said in favor of their scheme than in favor of river and harbor legislation and much less against it. Both come under the general class of "internal improvements," about which

there was so much heated discussion in the early days of the republic.

National aid to road improvement as now advocated would be free from the "log-rolling" indulged in by legislators who are anxious to secure funds for improvements in their districts or States, for the funds would be equitably distributed according to a general plan. The Government would simply make available a sum of money an equitable share of which could be secured by any State or county complying with certain specified conditions.

At a good roads convention held under the auspices of the Washington Good Roads Association in Spokane, Wash., October 8 to 10, which was one of the most successful and enthusiastic ever held in the United States, the prevailing sentiment of the delegates and speakers from all sections of the country was strongly in favor of national aid in building roads, the expenditure of funds raised to be under the most intelligent direction of skilled engineers and road builders. The vast amount of money wasted every year in the repairing of bad roads was dwelt upon by many speakers. It was stated that this sum so expended if capitalized would show that the people of the United States are paying the interest annually, through losses due to bad roads, on two and one-half times what the national debt was at the end of the Civil War. These figures, derived from authoritative sources, were startling to many of the delegates, and they have determined to go to work and mold a public sentiment that will lead to a reduction of this annual outlay for bad roads by building good ones.

It was pointed out also that the general Government has contributed vast sums to aid the commerce of the country by the granting of public lands to railroads, by the improvement of the rivers and harbors, and by the building of canals, but not a dollar for several generations has been granted to aid the initial commerce of the country and to benefit the husbandman.

This convention also appointed Samuel

Hill of Seattle, the President of the Washington Good Roads Association, an agent to go to Washington before the Congress and press upon that body the great need of Government aid in building the highways of the country.

At a similar convention held in Portland, Oregon, October 23 and 24, the two points which came out most clearly through all the deliberations of the convention were that the farmers of the State were getting thoroughly aroused to their need for better roads and that they propose to have Congress recognize the equity of national co-operation with States and counties in bearing the expense of their construction. Scarcely a speaker addressed the convention who did not, in some form or another, bring out this thought, and when the sentiment was advanced that any aspirant for legislative honors, either State or national, who couldn't see this very clearly was a good man to leave in private life, it was greeted with prolonged applause. The Brownlow Bill was discussed at length by the resolutions committee, which arrived at the unanimous decision that the bill should be approved as it stands, and that all interests should unite for it.

Among the resolutions adopted by the convention was the following:

"Be it Resolved, That we favor the general principle of State aid in road construction under competent engineering supervision, as embodied in the laws of many of the older States, and that we believe that the General Government, that derives its prosperity and power from the States, should contribute its equitable proportion to the cause of road betterment, which will so greatly advance the welfare of the States and improve the condition of all the people; and we urge our State and National representatives to give their hearty support to this policy; and we especially urge upon our representatives in Congress the necessity and great importance of an appropriation of not less

than \$100,000 for the Office of Public Road Inquiries, in order that object-lesson roads may be constructed in all the States."

A lively agitation is carried on from Washington for impressing the public at large, through the press, with the justice and timeliness of the Brownlow measure. A bureau in charge of this portion of the work sends out a great deal of printed and typewritten matter on this subject, among which there was recently a story of a farmer being interviewed on "reciprocity." The farmer is supposed to have said:

"Couldn't have suited me better for a subject, Mister. The fact is I've been thinkin' a good deal about reciprocity lately. I believe in it. I don't mean reciprocity with Cuba nor Canada, although that may be very well in its place. What I want to see is reciprocity right here in the United States. I think reciprocity, like charity, should begin at home. I want the fellows who have been enjoying the blessings of protection for a good many years to reciprocate a little with the farmers who don't seem to get much out of the tariff, except the privilege of payin' it. I don't deny that protection has built up industries, and developed resources, but it's been too one-sided. Looks to me like protection had mostly benefited the people who live in the big cities, and the men who run the big manufacturing concerns."

"What do you propose?" asked the interviewer.

"Well," said the farmer, "I want some plan adopted by which a part of the tariff collected will get back to the rural districts. I understand there's a fellow down there in Congress who has introduced a bill that will do the business. I mean that bill providin' for the Government to aid in improvin' the roads in the rural districts. That would be a great blessing not only to the farmers, but to everybody. Talk about developing resources! I'd like to know what would do more to develop this country than buildin' good roads. If this plan was adopted, a few millions of the taxes the farmers pay would come back to them. That's the kind of reciprocity I believe in."

Along the Lower Mississippi Levees.

Automobilists of the North who will journey southward this winter to avoid the rigors of the winter weather and in quest of a change of scenery can find some pleasant and interesting territory in the vicinity of New Orleans where the use of the motor car will afford new delights. "This is an all-the-year-round automobile country and the winters are the best weather we have, though it is rarely too warm in the summer time to enjoy a ride through the country," writes Sam Stone, Jr., secretary of the Automobile Club of New Orleans. "The automobilists of this city have succeeded to some extent in convincing the public that their machines are more easily controlled than the comic papers would have them believe, and the city council recently passed an ordinance which we believe to be, from the standpoint of automobilists, one of the most liberal ordinances in the country. The number of machines here is rapidly increasing and appropriations for good roads are being made by the parishes throughout the State."

Mr. Stone, accompanied by his brother Guy, and R. R. Soulé and F. G. McDonnell, in three machines, made a run from the Crescent City to Baton Rouge recently, a distance of 117 miles each way. Several of the accompanying pictures were taken on this trip. Regarding the run, Mr. Stone says: "We made the trip from here to Baton Rouge in seven and one-half hours running time, and in elapsed time of about nine and one-half hours. We were surprised to find the roads in such excellent condition. The road follows the bank of the Mississippi for almost the entire distance of 117 miles. It is a dirt road and as good as anybody needs; and the scenery is simply beautiful. All along the route there were great plantations of sugar cane, and all the cotton fields were white. Hundreds of negroes were out picking them. The scenery on the bayous was beautiful, too. Very seldom, if ever, has an automobile been through that region, yet we caused no runaways or accidents on the trip. The horses only looked at us

askance, and stood steady enough, but their drivers yelled in fright and vanished into the underbrush of the woods. Those who had the courage to remain would not take the risk of passing us and we had to get out and lead the horses by.

"We followed the river from here to Geismar, a station on the Y. & M. V. railroad about ninety-five miles from New Orleans. From there we struck across country to cut off the bend of the river. We crossed Bayou Manchac on a ferry at Hope Villa, shown in one of the photos, and from there followed the road into Baton Rouge.

"The roads around Hope Villa are especially fine. For country roads they are excellent. We fooled away half our time, though, leading country teams past our machines. In fifty miles we made fully 100 stops for that purpose."

Another interesting run was made from New Orleans to Ellendale on Sunday, October 24, by Alex. McCollam, one of Louisiana's veteran planters, and Palmer Abbott, an experienced automobilist. The distance was 130 miles, which was covered in about twelve hours' running time, no attempt at speeding being made. They started at 7 a. m., reached Darrow at 4.47 p. m. and stopped for the night at Donaldsonville, fifty miles from Ellendale. Starting early Monday morning they drove to Thibodeaux and then to Ellendale, making faster time than on the previous day as Mr. Abbott wanted to catch a train there.

The roads traversed were as good as any automobilist could desire, according to Mr. Abbott, the planters keeping them in good condition for their own use. The scenery was charming, especially the stately plantation mansions with their beautiful trees and shrubbery and flowers. The vistas of water between the moss-hung live oak trees along the bank of Bayou Lafourche, beside which they rode for some distance, were delightful.

Wherever the motorists stopped at a plantation house they were entertained royally by the hospitable planter and his family, but as soon as the negroes saw the automobile coming they ran away.



MOTORISTS IN LOUISIANA GAIN EXPERIENCE WITH TIRES AND CARBURETERS.

"But the road is going to be haunted with automobilists as soon as the people here awoken to the pleasures of such rides," says Mr. Abbott. "The planters are buying automobiles for use on their plantations and when the automobilists of New Orleans learn what sort of roads there are, and what kind of scenery there is in those parts, century runs will be made every day. I believe the trip down the river to Point a la Hache is quite as beautiful as the other."

Evolution of Light High-Speed Motors.

BY HERBERT L. TOWLE.

(Continued from Nov. 21.)

The omission of a line from the next to the last paragraph of the third column, page 542, in our last issue, made the first sentence of this paragraph rather enigmatical. It should have read: "One reason . . . for making both the piston and

does not need to extend down the length of the stroke. In several very successful motors of this type only the combustion space and valve chambers are jacketed. The explanation of this seeming anomaly is doubtless to be found in the fact that with a high compression, although the initial temperature of combustion is high, the final temperature at the moment of exhaust is much below that obtaining with low compression. Moreover, at high



In the Lowlands.
Levee Road.

ALONG THE MISSISSIPPI IN LOUISIANA.

A Ferry Across the Bayou.
The Gentilly Road, New Orleans.

Edwin S. Cramp, vice-president of the William Cramp & Sons Ship and Engine Building Company of Philadelphia, states that prolonged tests at his company's works have proved the gasoline and kerosene motor made by the International Power Co. of 74 Broadway, New York, to be the most economical prime motive power within the range of his knowledge. "It should revolutionize motive power on land," he writes, "and will undoubtedly have its proper place at sea." The motor in question is of the Diesel type, and so far as known has not as yet been adapted to automobile work.

the connecting rod as light as possible is to prevent their inertia, near the end of the compression stroke, from exceeding the pressure of compression which tends to hold them down against their bearings." The inertia force, it will be understood, is downward during the first half of the upstroke, whereas, during the second half, while the piston is coming to rest, it is upward.

CYLINDER DESIGN.

The design of the cylinder is not greatly affected by the speed, although it seems to have been very nearly demonstrated that in a high-speed motor the water jacket

piston speeds the charge is expanded and its heat converted into work more quickly than at low. This line of reasoning leads to the conclusion, borne out by experience, that over the combustion chamber the water space must be very ample.

So far, however, as the cylinder in general goes, the designer's skill is exercised mainly in getting rid of surplus metal without augmenting unduly the percentage of rejected castings. To cast a sound pair of cylinders is a difficult job at best, and when the jacket walls are to be thinned down to 3-16 or even 1-8 of an inch, and the heads are cast integral with the cylin-

ders, the best skill of designer, pattern maker, and foundryman is called into play. Even as it is, anywhere from two to ten castings are likely to be rejected, before or after machining, for one that finally passes inspection.

With high speed and high compression, the bothersome problem of keeping cylinder head packings tight is avoided by casting cylinders and heads together. As for the valves, the exhaust valve is made of 30 per cent. nickel steel, which alloy has the valuable property of resisting heat without warping or scaling, and with almost no expansion. But for this metal the high-speed motor would be a much more difficult problem than it is. The inlet valve is given stiffness by its form rather than by the amount of metal in it, and is made with a flat face to minimize its liability to stick.

VALVES: THEIR ARRANGEMENT.

The disposition of the valves is a point regarding which ideal and practical considerations are decidedly at odds. For the highest speed, the most rapid combustion, and the best all-around efficiency, the valves ought to open directly into the head, whose inner surface should approach the hemispherical. But the exhaust valve is much less readily operated in that position than when, as is usual, it is located in a valve chamber at one side and nearly over the cam shaft. And if the inlet valve is placed directly over it, it is easy to locate the plug where the fresh charge, instead of the spent gases, will draw past it. Consequently the latter arrangement is almost universally adopted for both valves, so far as vertical engines are concerned. If departed from, it is usually to place the inlet valve in the head, where the fresh charge can escape freely all around it. When this is done, especial pains must be taken in locating the spark plug and in so managing the lubrication that no surplus oil shall get into the cylinder.

AUTOMATIC vs. CAM-LIFTED INLET VALVES.

If the inlet valves are to be cam-lifted, the situation is even more awkward. It is impossible to place the two valves side by side in a valve chamber and work both from one cam shaft, unless speed is to be sacrificed, for they cannot be made large enough. The outer diameter of each valve must be fully half that of the piston, if speed is to be had, and this leaves nothing for clearance. Therefore, the usual device is to give each valve its own valve chamber, and use separate cam shafts, one on each side of the engine. That such an augmentation of the inner wall surface is detrimental to economy goes without saying, but the builders who have adopted it appear to be satisfied that it is worth what it costs.

The pros and cons of automatic vs. cam-lifted inlet valves it is hardly necessary to enumerate here. It would, however, seem that there is one very simple way to get the advantages of positive opening for the inlet valve without the disadvantages

of a fixed time of closing; and that is by applying a cam lift to the present style of automatic valve, with the same spring and the same light weight of the valve itself as at present used. Such a cam could retreat at the end of the suction stroke, leaving the valve to close at once or stay open a little longer, according to the velocity of the air stream. As the sticking tendency, if any, of the automatic valve is mostly overcome when the valve is clear of its seat, there would be rather less, if anything, of this trouble to reckon with. It would only be necessary then to provide a good stiff spring on the plunger rod and lever actuating the valve; the cam could be on the exhaust valve shaft, and very little change would otherwise be needed to adapt the modification to existing designs.

INLET VALVE DESIGN.

The need for extreme lightness in an automatic inlet valve is so fully understood that it is unnecessary to do more than mention it here. The weight of the valve increases roughly as the cube of its diameter, while its capacity increases only as the square. The stiffness of the spring must be such as to close the valve, from its full opening, in the time occupied by the excess rush of the incoming charge, after the piston has finished the suction stroke. The inertia of the valve, which the spring must be stiff enough to overcome, is in proportion to its weight. Consequently, the larger and faster-running the engine, the greater must be the relative stiffness of the spring; and at horsepower above 10 or 15 per cylinder the necessity for avoiding the loss of power due thereto becomes acute. It is met in various ways: in the high-power Panhards and in this year's Napier by using three small inlet valves instead of one large one; in this year's Mercedes by providing the valve with an inner annular aperture, with edges which seat like the outer edge when the valve closes. Thus the charge can pass through the inner aperture as well as from the outer edge, and the valve is lightened in proportion as its capacity is increased. Other makers have followed the lead of the 1902 Mercedes and given up the automatic valve altogether in favor of the cam lift, which has at least the recommendation of requiring less attention and fewer renewals.

When a single valve is used, it must be lightened, disc and stem, to the utmost that it will bear. It is usually made flat, but sometimes slightly coned, and with a lip turned up to form the flat seat. Steel, or sometimes nicked steel, is the material. The tendency of these valves to break off near the base of the stem is due to the inertia of the stem and washer at the moment when the valve seats. The only way to deal with it is to give the base a large fillet and make the stem as light as possible. The key should be tool or spring steel, very thin and deep, and the washer which retains the spring should be thin, small and light. A heavy washer

will break any valve stem. The stem should be no longer than is necessary to accommodate the spring, and the latter is usually of small diameter, so that light wire can be used. Sometimes, indeed, it is too small, so that it weakens with use.

TIMING THE VALVES.

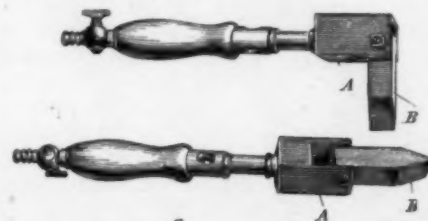
The timing of the inlet valve has been already referred to. Its exact time of closing, if a cam be used, or the exact stiffness of the spring, if the valve be automatic, will depend on the particular style and arrangement of carbureter, piping and passages. The spring can be approximately calculated, but the rest must be done by experiment. The same is true regarding the time of opening the exhaust valve, which at all high speeds must be considerably before the end of the stroke. Owing to diversity of practice as regards piping and mufflers, no rule can be laid down; but in general the piston will lack from a tenth to a quarter, or even a third, of completing its stroke, when the valve should open. The writer has even heard of a single-cylinder tricycle motor, running at speeds up to 2,000 r.p.m. or over, which opened the exhaust valve at 5-8 stroke.

As an early opening, though necessary at high speeds, spells loss of efficiency at low, it is much to be wished that simple means could be found for varying this time of opening according to the speed. If so, it would seem that the same means could be applied to the inlet valve as well, as regards the latter's time of closing.

Although to some readers the foregoing may smack of ultra-refinement, the modern high-speed motor is little more than the product of minute and patient attention to the points above set forth. Something may be done by abstract calculation, something by rough-and-ready guesswork; but the bulk of the designer's task is the study and intelligent application of practical results already attained. The infinite capacity for taking pains, which some one has miscalled genius, is nowhere better applied or more fruitfully rewarded than in the line of effort just detailed.

Convenient Soldering Iron.

The United States Consul, Monaghan, at Chemnitz, Germany, calls the attention of American manufacturers to a new soldering iron which has recently been placed upon the Berlin market.



The illustration presented herewith shows the features of this tool. The hollow copper bit is movable and can be placed at

any desired angle and, by virtue of this design, the iron is of great convenience in soldering metallic edges which are difficult of access. The iron should therefore be particularly useful in work on radiators, pipes and tanks in automobiles. The heat for the iron is generated by a gas flame of the Bunsen system and is utilized fully in the hollow part A, which prevents rapid radiation and concentrates the heat upon the copper bit B. It is reported that the use of this tool is particularly economical and that the size of the flame can be regulated at will.

Belt Transmission Survival.

That belt transmission has not yet lost all of its hold for small runabouts is shown by the fact that a 5 1-2 horsepower "Pony Richard" in the late 1,000-mile reliability trials in England had this form of transmission. The speed-changing gears, giving three forward speeds and a reverse, were

AUXILIARY AUTO SHOW IN HERALD SQUARE HALL.

Aid to Exhibit Offered Manufacturers
for Whom No Space Has Been
Provided At the Garden.

SIXTY THOUSAND FEET OF FLOOR SPACE.

The fifty or more applicants for exhibition space at the Madison Square Garden show to be held from January 16 to 25 whose displays the Garden management will be unable to accommodate owing to the limitations of the building, will be given an opportunity to make attractive exhibition of their products in the big Herald Square Exhibition Hall on the top floor of the new building at Broadway and 34th Street, erected and occupied by R. H. Macy & Co. This exhibition of automobiles and motorcycles, and parts and supplies is to be open day and night from January 16 to January 30. The hall has the largest level single floor space of any

A number of manufacturers will make displays at both the Madison Square Garden and at Herald Square Exhibition Hall, it is stated.

The hall is to be elaborately decorated during the fortnight of the show, which is to be followed in February by the National Motor Boat Exhibition.

Requests for further information should be addressed to Alfred Chasseaud, Manager Herald Square Exhibition Hall, Broadway and 34th Street, New York.

Casing for Side Chains.

An apparently successful solution of the problem of fitting a chain case to a side chain car is found in an attachment made by the builders of the Sunbeam (English) cars for their machines. The case is of sheet metal, and is split in the plane connecting the countershaft and axle centers. Where the case surrounds the large sprocket wheel and brake drum, the edge next the



HERALD SQUARE EXHIBITION HALL—Where Auxiliary New York Show Will be Held

enclosed in a case continuous with that surrounding the differential. The motor was in front, and the belt, which ran on fast and loose pulleys, was crossed. Unfortunately, this little vehicle had trouble owing to the engine overheating on the first day of the trials, and retired, so that no test was had of the belt's performance.

Fuel Through Pressure Cup.

The device successfully used in some steam vehicles in this country, of pumping the fuel through a pressure cup on its way to the fire, in order to avoid carrying air pressure in the tank, is found in a steam motor van lately built in England by the Gillett Motor Company, Ltd. The fuel in this case is kerosene, and the pressure cup through which it is pumped has an air chamber attached. On account of the gradual absorption of the air by the kerosene, a small hand air pump is connected to the air chamber, to be worked at intervals as needed.

permanent exhibition hall in New York City, having 60,000 square feet, and has been divided into seventy spaces 21 by 23 feet with three broad aisles longitudinally and the same number transversely. The hall is excellently lighted in the day by a huge central glass dome and side wall windows, while at night it is brilliantly illuminated by electric lights, so that none will need to be installed by the exhibitors.

A dozen large and fast passenger elevators give access to the hall, while either of two huge freight elevators will carry the largest motor truck direct from the street level to the exhibition hall. A special arcade entrance that is entirely separate and distinct from the Macy store entrance is arranged at night.

This show is in no manner intended to interfere with the Madison Square Garden exhibition or other trade show, the aim of Manager Alfred Chasseaud being mainly to give those who are "unable to secure suitable space elsewhere an equal opportunity to meet the trade and buyers in a representative and dignified co-operative exhibit during the automobile show season."

spokes has a thickened ring attached, which fits in a groove in the drum between the sprocket ring and the spokes. The other edge fits in a groove in the periphery of a disc bolted to a flange threaded adjustably on the axle. This disc carries the stationary portion of the brake mechanism, which is of the internal expanding ring type. On the outside of the front end of the case, over the hub of the sprocket pinion, is a cap elongated sufficiently to clear the hub whatever the shifting of the case as the distance rods are adjusted. The front end of the case is supported by a plate loosely mounted on the countershaft, and the case is attached to the plate by bolts passing through slots in the case, allowing the latter to shift. The chain dips into a little oil carried at the bottom of the case.

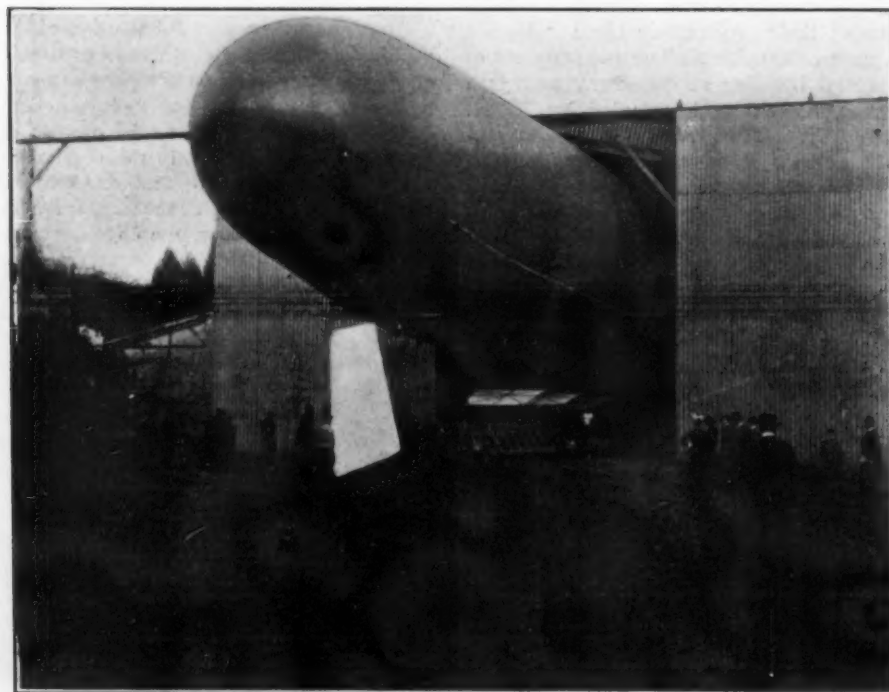
A special feature of the Gobron-Brillié 100-hp. racing car is a double clutch, in which the first engagement is between metal to metal surfaces, well greased to permit gradual engagement. Following this the regular leather-faced cone clutch takes hold.

By Motor Through the Air.

Notes of Recent Developments in the Adaptation of Automobile Motors to Air Navigation.

Carried off its feet, as it were, by the great impetus given to investigation of air navigation problems through the spectacular successes achieved with motor balloons, the automobile world has almost incorporated the work of experimenters in this line as part and parcel of its own. Popu-

larly speaking, the kinship between all new forms of locomotion which are independent of steel rails but dependent upon motor power, is acknowledged without much scrutiny of their relative importance or adaptability to practical needs. The fact that a motor car can go sixty miles per hour, and faster, over good roads, is considered pretty fair assurance for the assumption that a balloon equipped with the same kind of motor as propels the car, will soon be a practical conveyance, if not for heavy goods, at least for persons.



SANTOS DUMONT'S MOTOR BALLOON "NO. 10."
Issuing from its Shed to make a Captive Ascension.

Most scientists, on the other hand, pooh-pooh the balloon idea, but are willing to stake their reputation, though not their lives, on the motor-driven aeroplane. Kite experimenters and "gliders" belong to the scientific group who believe that the aeroplane will triumph, but they assert that we must learn first how to manipulate them, lest we perish in our first attempts at flight. The brothers Wright, of Carolina, Octave Chanute, M. E., of Chicago, and Mr. Cody (not Buffalo Bill), who was recently dragged from Dover across the Channel to France

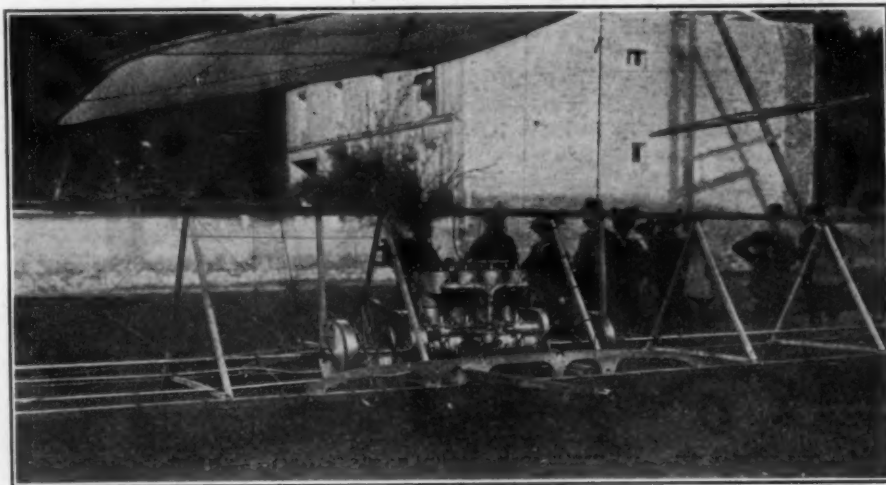
Lillienthal met death in an experiment similar to theirs, their cautious proceedings have not caught the fancy or the financial support which have come to the aid of the balloon workers who actually rise to heights and move about in the

atmosphere with some choice of speed and direction.

Among these the Brazilian, Santos Dumont, has easily been foremost, though he has always carefully chosen calm days for his experiments into the blue, and has been rewarded for this discretion by almost total avoidance of accidents, though in one of his first flights his balloon was carried against one of the lofty structures of Paris and the aeronaut himself was precipitated with it and kept dangling some sixty feet over an inviting backyard, the framework being fortunately wedged between two houses.

Count Henry de la Vaulx follows him as a close second in popularity, having traveled, it is said, 12,000 miles through the atmosphere and attempted to cross the Mediterranean. Unlike the other motor balloons, those operated by De La Vaulx are spherical and capable of but slight deviation from the direction of the wind. One of the earliest British aspirants to fame in this direction was Mr. Stanley Spencer, who still continues his experiments in London; he once attempted to make a trip around the St. Paul church, but the weather was cold and the condensation of the gas which resulted from the low temperature cut the voyage short. Another Briton whose endeavors are very ambitious in regard to the size and construction of his air ship is Dr. Barton, who is at present preparing for an ascension. Illustrations are presented herewith, showing the elaborate character of the frame-work suspended from his huge oblong balloon carrying three motors, each of 60-horsepower. The novel feature in the latest motor balloons, is the employment of aeroplanes in conjunction with them, the aeroplanes serving to lower or raise the balloon without recourse to escape-ment of gas or discharge of ballast.

Several successful flights—and one which nearly ended in a catastrophe—have been made lately by Mr. Lebaudy of Paris, who has even succeeded in distancing Santos Dumont so far as speed against a contrary wind is concerned, but it should be well

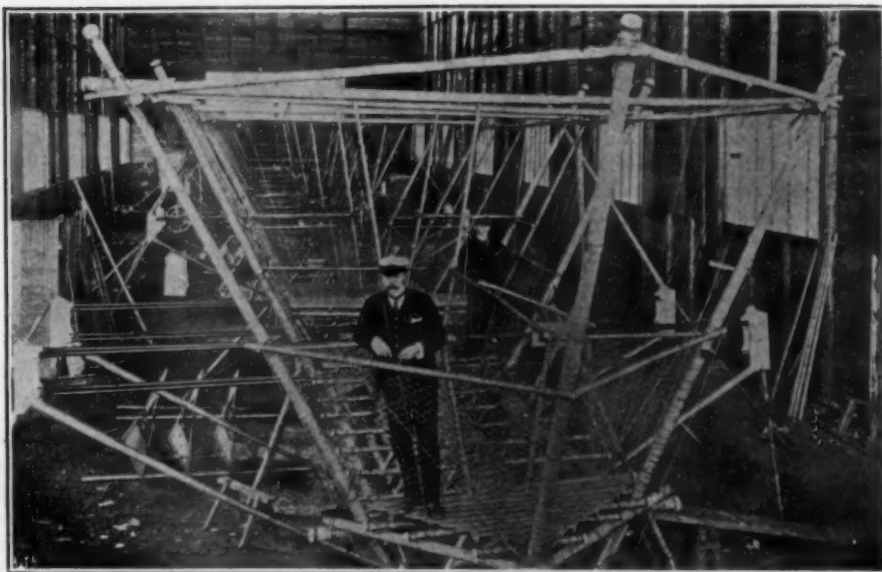


FRAME AND 60 HP. CLEMENT MOTOR OF "NO. 10."

understood that the velocity of the wind, against which the balloon navigators undertake to contend, is never more than eight miles an hour and that the balloons under all other conditions of the weather are kept carefully protected in enormous sheds.

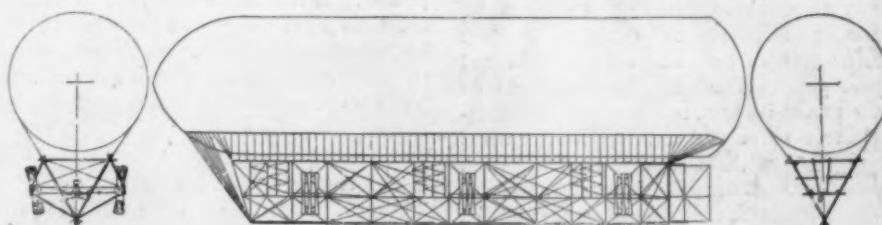
Since Mr. Santos-Dumont returned to Paris from Brazil, where a festive reception was tendered him, he is preparing his "No. 10," which is illustrated herewith, for a longer and more difficult flight than hitherto attempted. In the trials for ascertaining the stability of this machine it was anchored to the ground and permitted to rise as a captive balloon, and at this trial several Americans were conspicuous as passengers. The American Consul to Portugal, Mr. Bryan, Clarence Mackay, Mr. Chatfield-Taylor and several persons of other nationalities tasted of the exquisite joy of rising in a dirigible 20th century motor balloon.

One feature which all the most successfully operated latter-day air ships of the balloon type have in common is their small margin of lifting power. The aim is to build them neither lighter nor heavier than the atmosphere but as nearly equal to the weight of the displaced air as possible, leaving to the motor or motors the work of elevating or lowering as well as that of propelling the structure. Dr. Barton's design, though not yet tried out, is supposed to represent the most scientific effort for increasing the control over height and direction by this means, and for this reason additional details on this, the largest flying machine so far constructed, may be of interest. The framework is built of bamboo varying in size from 1-1/4 inch to 5 1/2 inches diameter. The general principle is, of course, that of securing rigidity



Reproduced from Automotor Journal.

BAMBOO FRAME WORK OF DR. BARTON'S AIRSHIP.
To Carry Three 50-HP. Motors and Seven Men—Dr. Barton on the Deck.

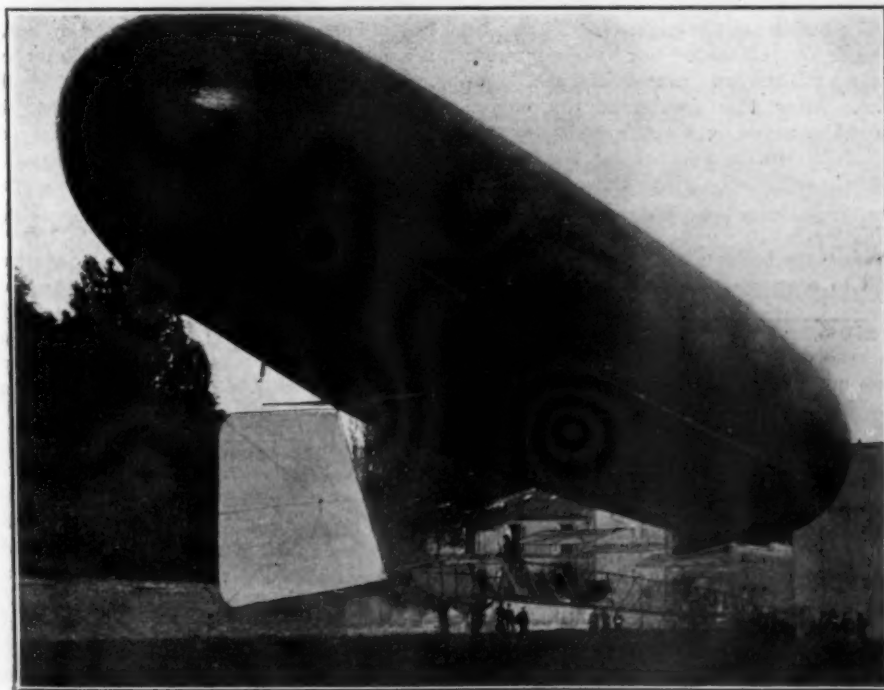


SIDE ELEVATION AND SECTIONAL CUTS OF DR. BARTON'S AIRSHIP.

by lashing the bamboo in triangles. The keel consists of three pieces of this strong and light timber lashed side by side. The deck supporting the motors and passengers is made of latticed wood and enclosed with

light bamboo framework and wire netting on the sides. The keel is 120 feet long, the deck 123 feet and the upper frame 127 feet long. Three 50-horsepower Buchet motors are disposed at even intervals, one in the center and the two others midway from it to the front and rear ends 30 feet apart. They are bolted to aluminum castings which are clipped to the large bamboo members. Six propellers receive their power in pairs by belts and pulleys from the motor shafts which are parallel with the keel.

By far the most important feature in Dr. Barton's ship is the arrangement of the aeroplanes by which it is intended to raise or lower the structure in the air. They are mounted between the deck line and the top of the frame, and are thirty planes in all, arranged in banks of ten. Each of the motors is to be under control of a separate man, and each bank of aeroplanes will also be independently operated writes the *Automotor Journal*, which supplies the details of this information. The speed of the propellers can be varied by regulating that of the engine in the usual way, and it is hoped that by adjusting the aeroplanes all such manoeuvres as are required for varying the altitude, can be carried out. The balloon proper is intended to have just sufficient lifting power to counterbalance the weight of the ship, and the engines are therefore relied upon



SANTOS DUMONT "No. 10" ASCENDING FOR A TRIAL.

How to Keep a Car in Idleness.

Considering that the condition of roads and the rigors of temperature during the winter in several of the northern States will cause many persons, who use motor cars for pleasure driving only, to forego their favorite pastime for several months, the best methods of preparing a car for such prolonged inactivity—well understood to be more injurious than hard legitimate use if the precautions are neglected—will be of interest, especially as they apply equally to any other similar period of non-use of a car. A contributor to our oldest British contemporary supplies timely advice on this subject, from which American motorists may profit, if they should decide not to follow the lead of the average farmer who leaves his costly machinery almost unprotected at all seasons of the year and pays dearly for its premature replacement.

THE FIRST STEP.

When the car is brought in after its final run, and the preparations for putting it away are commenced, the first thing to be done is to remove the cushions, aprons, motor horn or bell, and all the tools and spare parts. The accumulator should be taken from its box, and it would be advisable to remove the coil and all the wires connected with the electrical ignition apparatus. When doing this a rough sketch should be made showing the method of wiring, to assist the memory when these parts have to be replaced.

CLEANING THE CAR.

The vehicle as a whole should then be thoroughly cleaned, and the body washed by means of a hose pipe with a slow running stream. After washing the water should be dried up by means of a soft sponge, and then the whole polished with a soft chamois leather.

As to the metallic parts, the best treatment for these is to go over them with a painter's brush and kerosene, afterwards wiping the parts so treated with a soft cloth.

The tires should be removed from the wheels, the air tubes carefully examined and tested, and if found to be in good condition they should be treated to a liberal supply of French chalk, and put into a bag or box, and stowed away, preferably in a dark room where an even medium temperature obtains. The covers themselves should be very carefully examined, and all cuts, whether large or small, should be probed and cleaned out, and then solutioned up. If this is beyond the capabilities of the owner, the tires might be sent to the manufacturers for general overhauling and repairs. For the storage of the outer covers of the tires, the same conditions apply as to the inner tubes. As their bulk is very much greater than that of the inner tubes, the most handy method of protecting them for storage is to bandage them round with strips of canvas. An excellent substitute for French chalk is flour of sulphur used liberally; it preserves the casings soft and pliable. If it is not convenient to remove the tires from the wheels, the car should be jacked up and packing put underneath the axles, so that the wheels may be kept well off the ground.

ENGINE TREATMENT.

The engine should be washed out with kerosene, this being injected into the cylinders and crank chamber, several turns should be given to the starting handle so as to swill the oil as much over the interior of the crank chamber as possible. After standing a few minutes, open the drain cock and allow the oil to run off. This operation should be repeated until the liquid flows from the crank chamber as clean as when put in.

The outside of the engine should also be thoroughly cleaned. For this purpose use a stiff-bristled paint brush and kerosene. After this treatment the engine should be wiped over with a clean dry rag. As aluminum is affected by the atmosphere, particularly where the air is damp

and heavily laden with salt, it would be advisable as a protection to all the metallic parts of the engine, to paint these over, and for this purpose some special form of paint is necessary. [Our contemporary here recommends to try a mixture of white lead and olive oil, as being easily removable. We would suggest, also, a coating of stearine applied as a solution in turpentine, the liquid evaporating and leaving a thin coat of the stearine. This is used in the storage of field guns.]

Reverting to the interior of the engine, it is not generally advisable to lubricate this. With regard to the valves, these might be removed with advantage in some instances; and if the exhaust valves are removed, the bottom end of the guides should be plugged to prevent the ingress of dust and dirt.

TRANSMISSION GEAR.

The change speed gear should be washed out with kerosene in a similar manner to the engine. If the car is a direct driven one, the bevel gear case should be filled with grease, there being no necessity to clean this out. The change-speed gear box lid should be removed, or probably in many instances it would be better to remove the top half of the gear box completely so as to expose the gear wheels contained therein. Good lubricating oil should then be applied to the gear wheels by means of a brush. For this purpose, cylinder lubricating oil would probably be the best medium to employ, as it would not be so liable to oxidize as many of the cheaper lubricants.

CONNECTIONS AND CHAINS.

All the pins, joints, and connections should be well oiled; in fact, it is better to remove them, clean them thoroughly and replace them with a good coating of vaseline. The wheels should be jacked up and removed from their axles, these and the axle boxes being cleaned out and well greased before replacing. The anchored ends of the carriage springs and their shackles should also be well greased. These are some of the points which are

both for propelling it in the direction of travel and for lifting it to the desired height. Steering in a horizontal plane is to be effected by a large rudder at the stern. A telegraph system of communication is to be equipped between the chief aeronaut's deck and those in charge of the motors and the aeroplanes, the ship carrying a full complement of seven men in all. The balloon itself, which is constructed of varnished silk, is cylindrical in form with an ogive nose, and a nearly hemispherical stern. It is 176 feet long and 43 feet in diameter, its cubic capacity being 235,000 feet. When filled with hydrogen gas its lifting power is approximately 16,450 pounds. The usual balloonette, filled with air, is to be fitted inside it in order

to keep the balloon itself properly inflated and to compensate for variations of tem-



SHED FOR DR. BARTON'S AIRSHIP.

perature or loss of gas. A gas valve of much the ordinary construction is fitted at the top. To maintain a level keel

independently of the movements of the passengers there are two 50-gallon tanks, one in front and one in the rear, connected by a pipe and normally each half full of water. A pump permits a shifting of any part of this water load from stem to stern or vice versa.

The Automobile Club of Great Britain and Ireland has decided to recognize and keep a record of non-stop runs. The club will furnish an official to ride on any car which it is proposed to send for such a record, his expenses and \$10 a day for his services to be borne by the manufacturer. To have the run officially recognized proper preliminary notice must be given and arrangements made for the observer.

particularly liable to be overlooked when going through the process of overhauling and cleaning. Where chain driving is employed, the chains should be removed from the sprockets and well cleaned in kerosene, after which they should be immersed in melted tallow and be allowed to remain in this for several hours. Remove the chains, hang them up to allow the superfluous grease to drain off, and then fold them up and pack them away in greased paper until they are required again.

PROTECTION OF EXPOSED METAL.

After having attended to the engine and gearing, the next thing is to go carefully over all the metallic parts of the frame and of the connecting rods used in conjunction with the steering gear, change-speed gear, and the brakes. Where the paint has been scratched or barked sufficiently to expose the metal, this should be rubbed bright with a piece of emery cloth

LUBRICATORS.

All the lubricators should be drained of any oil which they may contain, and should be thoroughly washed out with kerosene or stale gasoline. Where sight-feed lubricators are fitted, or types which necessitate the using of lengths of copper pipe to convey the lubricant from its receptacle to the bearings, such pipes should be removed, and should have kerosene passed through them. If this is attended to carefully and the pipes are reconnected, when the car is taken out again one will know and be perfectly satisfied that all that is necessary for the good working of those parts is a fresh supply of lubricating oil.

A COVERING FOR THE CAR.

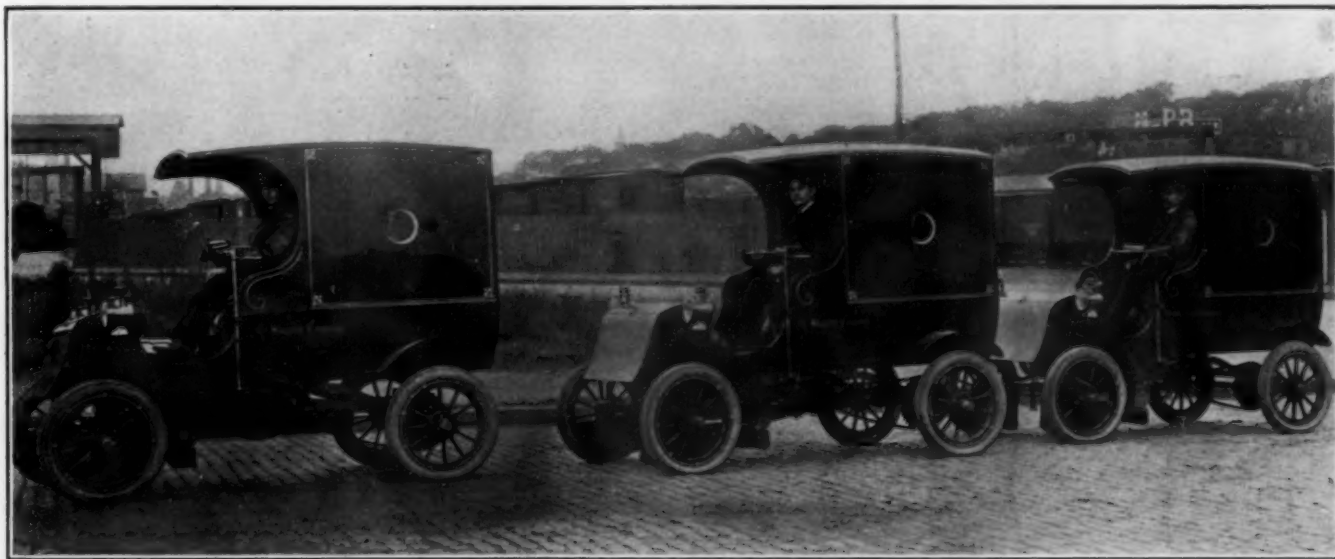
It is well to cover the whole of the vehicle with a light sheet, the edges of which are provided with tapes to enable it to be tied down into position on the car. Leather

a large dish with sloping sides, its busiest portion being in the bottom, surrounded by elevations forming the residential sections. It is partly on account of the surface of the country in which the machines are being used that the experiment is being closely watched by automobile owners and merchants in Rhode Island.

The delivery cars were put into commission late in October. They are driven by air-cooled gasoline motors and the wheels, engine and transmission are of the regular Knox type.

Last summer a car which had made a good record in a previous public test in New York was exhibited in Providence and sent over the routes of the Shepard Company. The performance was so satisfactory that as a result three new cars were ordered.

In speaking of the test runs which have been made by the cars an official of the



GASOLINE MOTOR DELIVERY WAGONS IN PROVIDENCE, R. I.

and paint or air drying enamel applied, giving it at least two coats of either. All plated or polished parts should be given a coating of pure vaseline after they have been thoroughly cleaned and polished. Pure vaseline, as obtained from the chemist, is specified as distinct from the commercial article, which is not so pure, containing as it does salts which are highly injurious to nickel or silver-plated parts, whereas the refined vaseline has no effect upon them.

THE CLUTCH.

Special attention should be given to a leather-faced cone clutch. This should be withdrawn as far as possible, and its surface well cleaned with gasoline, after which it should be given a good coating of castor or collan oil. The clutch pedal, or some of the connections, should be tied up in such a way that the clutch leather is not allowed to be in actual contact with the opposite portion of the clutch; or to this end a small wedge may be inserted at opposite sides of the clutch.

hoods should not be allowed to remain for any long period in a folded-up position, for however good the leather may be, and whatever means are taken to provide for its protection and the retention of its suppleness, it will dry and crack where sharp bends occur in it. For this reason it is well, if possible, to let the hood remain open during such time as the car is standing in the garage.

Practical Trials of Gasoline Motor Delivery Wagons.

A severe and practical test for business automobiles is now being made by the Shepard Company in Providence, Rhode Island, one of the largest department stores in the State.

The grades on the highways in and about Rhode Island's capital are of a type which renders the average daily run of a car a sort of an endurance test in itself. The city has been compared to

company stated that the machines were proving satisfactory thus far and that the automobiles were undoubtedly a permanent feature of the store. The company has five or six deliveries a day, carrying an average of from 75 to 100 packages. These packages vary in weight, but a fair estimate is said to be a total of about 300 pounds. A short time after the cars were put into commission one driver delivered 27 packages in one hour and twenty minutes; another delivered 73 packages in two and one-half hours, and the third 100 pieces in two hours and forty-five minutes. These records were made on a day when the weather was fair. The three cars made three trips each in an aggregate time of sixteen hours and fifteen minutes, consuming eight gallons of gasoline. The best time made by horses on the same route was thirty-three hours. On a day when the streets were wet and slippery, the additional consumption of gasoline was about one gallon for each machine and the total time about one hour more.

The New Four-Cylinder Toledo Car.

The Pope Motor Car Company has completed its first 1904 model gasoline touring cars, and sample vehicles are now being exhibited at the Toledo factory. The new cars are of two and four cylinder type, the smaller one being not unlike last season's model, while the four-cylinder car is radically different from anything produced previously.

As the accompanying illustration indicates, this vehicle is of strikingly original design. The full curves and bold outline

inches wide across the top, the sides dropping about 3 1-2 inches. Two frame members extend from a cross piece placed just forward of the center of the car to the front cross member, parallel to the side pieces, and these support the motor. The transmission is placed crosswise of the car, back of the center and to the right. The countershaft runs in large ball-bearings which are contained in cases bolted to the frame of the car, and these are connected to the transmission case by substantial steel tubes flanged and bolted to the transmission case at one end and to the ball bearing cases at the other, so that the whole forms a unit and assures perfect

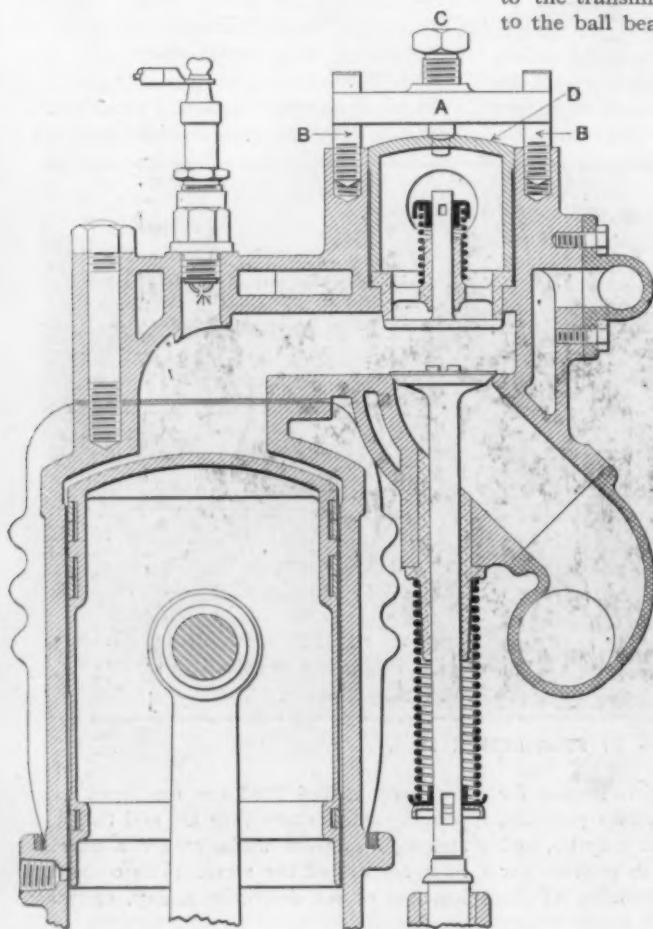
pressed steel also, and the motor bonnet is of the same material. The bonnet is hinged on its longitudinal center so that the sides may be lifted up to expose the motor.

MOTOR AND TRANSMISSION.

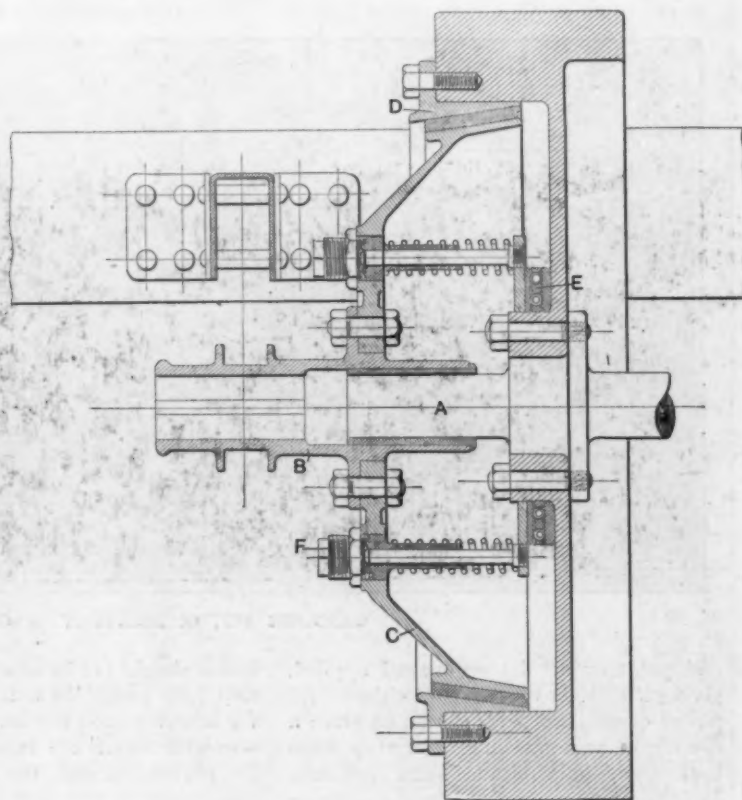
The 1904 four-cylinder Toledo motor is radically different from types previously developed by the Pope Motor Car Company.

Referring to the photograph that shows the carburetor side of the motor, it will be observed that the cylinders are cast separately and bolted to an aluminum crankcase which is cast in two halves.

The copper water jackets of the 1903 four-cylinder car have been retained. Their lower ends slip into grooves in rings cast integral with the cylinders, which are



PISTON, WATER JACKET AND VALVE DESIGN.



SELF-CONTAINED CLUTCH ADOPTED FOR TOLEDO CAR.

that distinguished last year's four-cylinder Toledo car are present in the 1904 model, but the height of the body has been diminished several inches, and the wheel base is longer.

The entire mechanical equipment and the body of the 1904 Toledo car are attached to a pressed steel frame of original design, shackled to half-elliptic springs of unusual length.

The frame is unusually strong, although made of light steel, as it is held together by shouldered studs headed up on each side instead of by ordinary rivets. The cross section of the two frame reaches somewhat resembles an inverted and flattened U 1 1-2

alignment. The ball bearing cases are provided with lugs from which the front ends of the rear springs are hung, and to which the distance rods are swiveled.

SHEET STEEL USED EXTENSIVELY.

Not only is the frame of the new Toledo car made of sheet steel, but this metal is used extensively elsewhere in the vehicle, notably in the curved side panels of the front and rear seats, which are pressed into shape by the use of specially designed dies. The surfaces are perfectly even, and present a very rich appearance when enameled. The curved dash is made of

filled with solder after the jackets are sweated into place. This construction obviates the necessity for difficult cored work in casting the cylinders, while at the same time it is possible to make the walls of the cylinders of even thickness, thus assuring equal expansion when they become heated. Further than this the cylinders are very light in weight, although no strength is sacrificed in their construction.

Automatic inlet valves are used, and the sectional drawing shows the method used to hold them in place while not destroying their accessibility. The stirrup A has slotted ends which engage the heads of the screws B B, and it may be removed in an

instant by slackening the set screw *C* and slipping off the stirrup, when the cup *D* lifts out.

The inlet valves are forged of nickel steel and the exhaust valves of a special nickel alloy. The first engraving on the opposite page shows the general appearance of the inlet valve cages clearly. It may be noted that the compression cocks are connected by a linked rod which extends through the radiator where it terminates in a brass knob so that one movement relieves the compression in the four cylinders.

The cam shaft runs within a chamber cast integral with the upper half of the

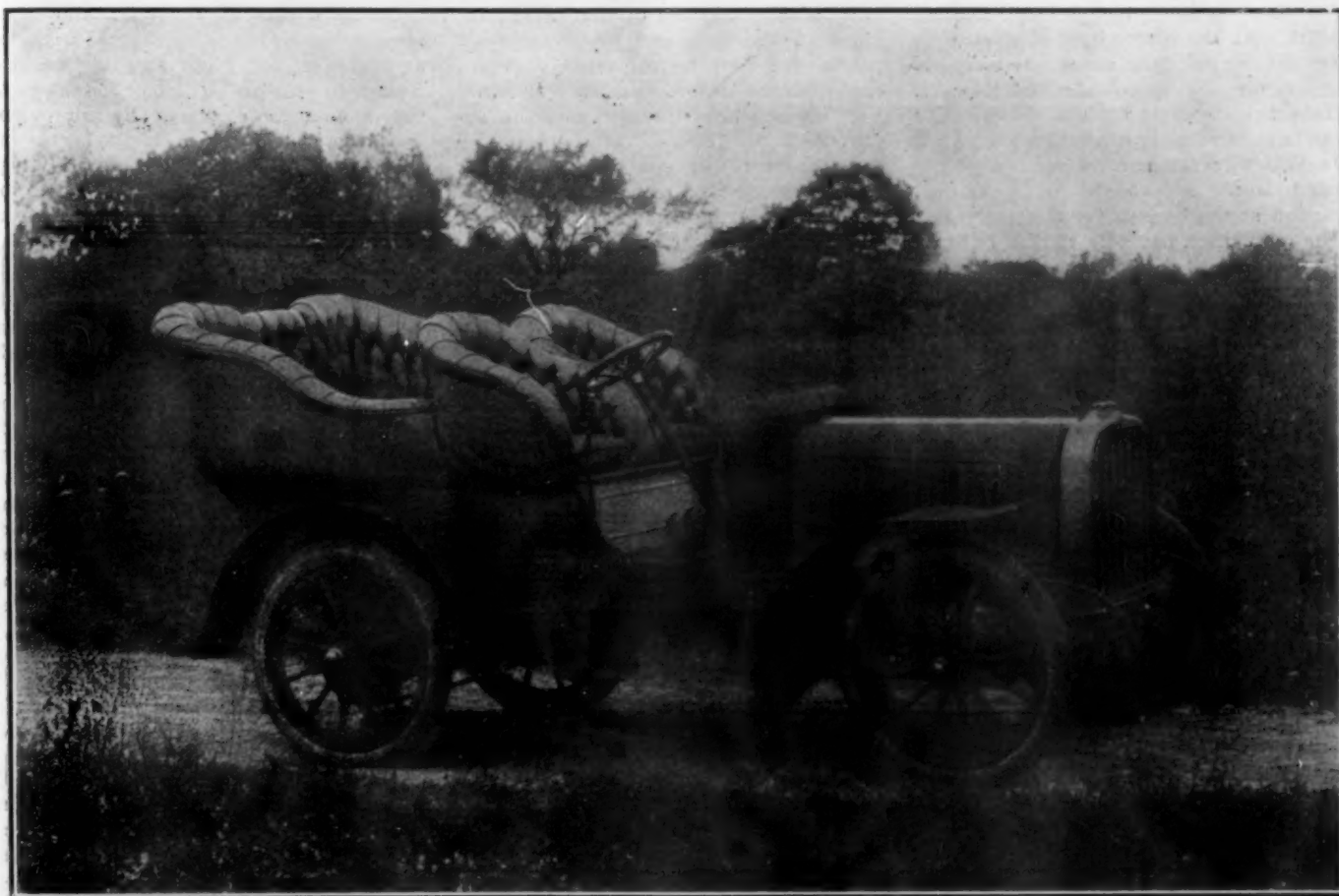
radiator. The construction of the radiator is such that the water is obliged to circulate back and forth, from the top to the bottom, in a very thin film about three inches in width. Every drop of water is subjected to the cooling influence whether the system is filled or not, a feature not common to all radiators now in use. A small overflow tube carries the excess water down to a point below the radiator, where it discharges to the ground, when the circulating system is filled.

CLUTCH AND TRANSMISSION.

Instead of the ordinary push clutch previously used on Toledo cars, the 1904

is no end thrust. The clutch is released by pressure on the thrust collar formed on the squared end of *B*.

Detailed information regarding the new Toledo transmission is not available at the present time. It is said to be of entirely original design, and it gives three forward speeds and a reverse. On the high gear the drive is direct, no gears being engaged. The differential is enclosed within the transmission case. Frictional loss has been minimized by the liberal use of ball bearings and end thrusts throughout the transmission. A double cardan jointed shaft connects the clutch with the transmission mechanism.



THE NEW FOUR-CYLINDER CAR BUILT BY POPE MOTOR CAR CO., TOLEDO.

aluminum crank case so that the cams and shaft journals are splash lubricated. The 2 to 1 gears are unusually large. The circulating pump, which is of the gear type, is mounted on the exhaust side at the extreme front end of the crankcase, and is driven from the large cam shaft gear. The pump gear carries a boss on which the driving fan pulley is mounted, the fan being connected with it by a bolt.

The radiator and cylinder jackets contain three and one-half gallons of water, approximately. The circulation is from the bottom of the radiator to the lower ends of the cylinder jackets, thence around the cylinder and back to the top of the

model has an internal cone and multiple springs. As the line section shows, its mechanism is wholly enclosed. An extension *A* of the motor shaft carries a bushed sleeve *B*, the rear end of which is internally squared to drive the first gear shaft. To a flange of this sleeve is bolted the male member *C* of the clutch, whose leather face normally engages the ring *D*. By backing off this ring ready access is given to the leather face for renewal or resurfacing. The springs bear between a ball-bearing thrust collar *E* and locknuttled plugs *F* shown partly in section. By adjusting these the tension of the springs may be regulated. When the clutch is engaged the ball bearing *E* is not working and there

CARBURETER AND THROTTLE.

The engine is controlled by spark and throttle, the throttle valve being acted on directly by the governor and the latter regulated by hand as usual. The admission of gasoline to the carbureter is regulated by a needle valve and remains fixed. Warm air only is admitted to the carbureter, the supply being taken from a case surrounding the horizontal exhaust pipe. The carbureter and throttle links are shown clearly in the photograph of the right-hand side of the motor.

THE OPERATING LEVERS.

The three forward speeds and the reverse are controlled by a single lever.

The brake lever applies two hub brakes and releases the clutch. The brakes are of the expanding ring variety, the ends of the rings being provided with rollers between which slanting wedges are forced by the hand lever. One foot pedal releases the clutch and applies a band brake which is connected to the differential, and, a second pedal actuates the clutch cone only. The foot accelerator pedal has been abandoned.

The governor control and spark levers are mounted on a neat double quadrant attached to one of the three brass webs which hold the laminated wood steering wheels. The movement of these levers is communicated by means of rods which are contained within the hollow steering pillar. At the extremities of these rods are slanting disc cams which move grooved collars up or down, as the case may be, the grooves carrying forked levers which are linked to the throttle and spark levers. In this way the relative motion of the hand levers is changed to a vertical motion at the base of the steering pillar. The mechanism is neatly worked out and is all contained within the steering pillar brackets.

Steering is effected by means of a sliding worm and quadrant arrangement. The steering device is spring-cushioned in a simple and effective manner to absorb the road inequalities which are necessarily felt by the front wheels, but which are not communicated to the hand of the driver. The steering worm is provided with ball thrust collars.

The steering wheel is pivoted in a novel manner, and the hand levers attached to the brass web of the wheel are not disturbed when the wheel is tilted.

Two sets of batteries are used to supply the ignition current and each cylinder has an independent coil. The four coils are mounted within a mahogany case attached to the back of the dash, and conveniently within the reach of the operator.

Lubrication is largely on the splash system, but in addition a reservoir which feeds each of the four cylinders is mounted on the dash. Four check valves are

placed in the system to prevent the oil from backing up. These check valves can be seen plainly to the left of the carbureter in the motor photograph.

The wheel base of the four-cylinder car is 93 inches and the tread is standard. The rear wheels are 34 inches in diameter and the front wheels are 32 inches, both with four-inch tires. It has been decided that the larger rear wheels improve the symmetry of the car.

The illustration of the complete car does not show its equipment of accessories or the final mud guards, which are to be of leather. The clearance under lowest part of the mechanism is 9 3/4 inches. The wheels are mounted on large ball-bearings.

With the exception of the wheels, the lining of the dash and the lower body panels and foot board, wood does not enter into the construction, and the metal work is all hard enameled in most approved style. Every detail has been developed with the greatest care and the machine work is of the highest possible grade. All of the components, including forgings, are made in the Toledo factory with the exception of a few parts and accessories.

Cleveland-Boston Run by L. P. Mooers.

L. P. Mooers, accompanied by Mrs. Mooers and a friend, Thomas Deckert, who left Cleveland on Sunday morning, November 15, in one of the new 24-horsepower Peerless cars, arrived in New York last week and on Monday of this week resumed his trip to Boston. The finishing touches were not put on the car until 6 o'clock the evening before the start from Cleveland. Rain retarded the trip for the first three days and bad roads delayed the tourists, but they reached New York Saturday morning after a most eventful trip. There was much discomfort owing to the intense cold, which froze the water from the roads fast to the car, filling the wheels between the spokes as far up as the hubs with ice which had to be repeatedly chopped out. Near Fonda, New York, the car went into a ditch and a farmer

with a team found it impossible to get it out. He tried two teams, according to Mr. Mooers and failed. Boards were then found and a road was constructed over which the car travelled out of the ditch on its own power. Upon his arrival in New York, Mr. Mooers was apparently much pleased with the performance of the car, for he said:

"From the start of the trip we found no necessity to use even a screw-driver. The car came through quite as though it had been thoroughly tested before leaving Cleveland. In taking the car right from the factory just as it was finished, I no doubt did something a little extraordinary, but my confidence was not misplaced."

On the trip no effort for fast time was made. Mr. Mooers is visiting the Peerless agents along the route and is going to Boston to visit his birthplace for the first time in a number of years. He will return over the road to New York, put his car in the Banker Bros.' garage and, after making a trip by train to Cleveland, will come to New York and drive back to Cleveland in the car.

New Motorcycle Brake.

A new form of motorcycle brake consists of a curved shoe, faced with leather and arranged to bear against the inside of the upper forward quadrant of the belt rim on the rear wheel. The back and top of this shoe is supported by a C-shaped spring attached to the rear fork in such a way that by pulling on the other end, which is attached to one arm of a bell crank, the whole shoe is pulled forward till it engages the belt rim. The form of the spring is such that the brake is equally effective backward or forward. The Lyon Cycle Co. of Lowestoft, England, are the makers.

MOTORISTS AND HORSEMEN DWELL IN AMITY IN WISCONSIN.

MADISON, Wis., Nov. 21.—Harmonious relations exist here between the nineteen resident owners of automobiles and the business men, property holders and pleasure horse owners of this little capital city of the Badger State. This friendly feeling is reflected in the relation existing between the recently organized Madison Automobile League and the Madison Park and Pleasure Drive Association. The Park and Drive Association has more than 700 members and owns thirty miles of beautiful macadamized roads and several parks. Nearly all of the members of the Automobile League are also members and heavy contributors to the Association. Much of the drive system is planted on both sides with trees and flowering shrubs, and the drives wind in and out along the shores of the three lakes, the city of Madison being picturesquely situated on the narrow necks of land separating Lakes Mendota, Monona and Winga, with the State Capitol and Wisconsin University buildings occupying

American and Foreign Automobile Fixtures for the Winter.

1903.
 Nov. 15.—Alcohol Heavy Vehicle Trials. German War Office.
 Dec. 10-25.—Sixth Annual International Exposition of Automobiles and Cycles at Paris. Grand Palais. Automobile Club of France.
 Dec. 31.—Closure of Entries for 1904 Gordon-Bennett Race.
 1904.
 Jan. 16-23.—Fourth Annual Automobile Show, New York, Madison Square Garden. National Association of Automobile Manufacturers, Madison Square Garden Company and Automobile Club of America.
 Jan. 23-Feb. 4.—International Automobile Exhibition at Brussels.
 Jan. 25-Feb. 6.—Racing Tournament at Daytona, Fla. Ormond-Daytona-Sea Beach. Florida East Coast Automobile Association.
 Feb. 6-13.—Fourth Annual Automobile Exhibition, Chicago. Coliseum Building. National Association of Automobile Manufacturers and Chicago Automobile Club.
 Feb. 12-24.—Second Annual Automobile Exhibition. Crystal Palace, London. Society of Motor Manufacturers and Traders.
 Feb. 15-20.—Third Annual Exhibition at Detroit. Detroit Light Guard Armory. Tri-State Automobile and Sporting Goods Association.
 Mar. 6-12.—Second Annual Buffalo Automobile Show. Convention Hall. Automobile Dealers' Association of Buffalo.
 Mar. 14-19.—Third Annual Automobile Show, Boston. Symphony Hall. Boston Automobile Dealers' Association.
 Mar. 17.—Start of Touring Trials, Paris to Rome organized by La France Automobile.
 Mar. 19-26.—Motor Car Exhibition, London. Agricultural Hall. Cordingley & Co.
 Mar. 20.—Opening of Automobile Festival at Nice, France.
 Mar. 21-26.—Fourth Annual Washington Automobile Show. Washington Light Infantry Armory. Washington Automobile Dealers' Association.

commanding positions upon a hill in the center. In many places the sinuous drive cannot be seen 100 feet ahead, so that the necessity for rigid rules and careful supervision of the traffic is evident and acquiesced in by all.

For the better regulation of automobiles in the parks and on the drives and in order to insure the careful observance of the rules, the Madison Park and Pleasure Drive Association allows the privileges of its property to be regularly enjoyed only by automobilists to whom licenses are issued by it upon the recommendation of the Madison Automobile League. All drives west and south of the city, known as the Mendota Drive, are open to the use of such motorists on Tuesday afternoons and Thursday forenoons, and all drives north and east of the city, known as the Farwell Drive, on Wednesday forenoons and Friday afternoons.

The automobilists are expected to observe not only the restrictions closing the roads to them on specified days, but also to conform with the other automobile rules of the Association which require that when "meeting or passing a horse the person having charge of the automobile shall reduce its speed to the equivalent of a horse's walking gait," and upon signal by hand from the driver of the animal "shall bring the vehicle and engine to a full stop and get out and assist the driver of the horse by leading the horse past the automobile, or by such other act as may seem necessary." In crossing connecting roads and drives and at turns and curves where there is not an unobstructed view of the road for three hundred feet, the speed of the automobile must be reduced to four miles an hour or less, and where the roadway is not visible for fifty feet or more, a bell shall be sounded at intervals of not more than ten seconds. Nowhere is a speed of more than eight miles an hour permissible.

Of the nineteen autos owned here, seven are steamers, nine gasoline cars and three electric vehicles. A circuit of Lake Mendota, twenty-seven miles, was made last week in a Waverley electric by George Raymer.

The officers of the Madison Automobile League are: President, Dr. C. A. Harper; first vice-president, Frank D. Winkley; second vice-president, S. F. Schoelkopf; secretary, H. H. Ratcliff, and treasurer, George Raymer.

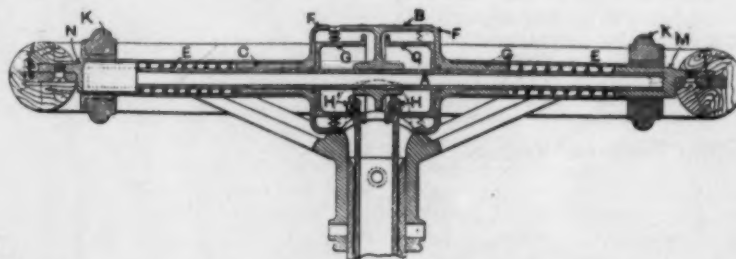
International Cup for Boats.

A \$2,000 prize cup has been offered by Georges de La Reziere of France to be won in a motor boat race to be run December 6. The trophy is to be known as the Challenge International Competition Cup and must be won three years in succession by the same boat owner and make of motor to become the permanent property of the winner. The race is to be over a distance of ninety-four miles this year and 125 miles next year.

Motor Control from Steering Wheel.

The accompanying illustration shows the device, incorporated in the steering wheels of the recent Panhard cars, by which the operator can regulate the spark and throttle without removing his hands from the wheel. The device in question takes the place of two of the spokes of the wheel, and consists essentially of a diametrical fixed shaft on each end of which is a sleeve which may be rotated to vary the spark or throttle.

In the drawing (reproduced from *The Autocar*), A is the shaft, and B, a cylindrical fixed cap with toothed ends. C C



are sleeves with enlarged and toothed inner ends F F, which are pressed by springs E E into normal engagement with B, whereby they are held against rotation. Secured fast to F F are drums G G, on which wind two wire cables, of which H H are the knotted ends whereby they are attached to G G. K K are knurled collars on the sleeves, by grasping which they may be released from B and rotated. The cables, of course, connect at the base of the steering column to the spark and throttle mechanism, and are unaffected by the turning of the wheel.

Speed Launch in Toronto Waters.

An interesting speed launch is shown in the accompanying illustration. It is twenty-five feet long by four feet beam and draws, with two aboard and sufficient gasoline for five hours' running, only six

inches of water. The power equipment is a four-cylinder Otto-cycle motor of about 12-horsepower, made by the Western Motor Company, of Logansport, Ind. The boat was built by the Canada Launch Works, Ltd. of Toronto. When the photograph was taken the launch was running slightly better than fourteen miles per hour. Its makers call it the "Gray Wolf."

Anti-Skidding Devices.

Two recently produced anti-skidding attachments for tires are described in *The Autocar*. One of these consists of a network of chains resembling the bicycle block chain, arranged in diamond pattern on the tread and connecting at the side

corners of the diamonds to short helical springs, whose other ends attach to wires lying one on each side next to the rim. These wires are drawn tight by turnbuckles till all the springs are sufficiently stretched. The principle of the device, which is the invention of E. Midgley, is that the chains grip the ground and the tire tread grips the chains, no driving force being transmitted through the side wires and springs.

The other device, which is known as the "perfecter," is the invention of a Belgian, Theodore Houben. It consists of a cover made of chrome leather studded with leather buttons attached by steel rivets. It is attached to the wheel by straps and buckles formed to loop around the spokes, rendering "creeping" impossible.

The Automobile Club of Utica, organized March 13, 1903, now has fifty-one active members.



"GRAY WOLF" SPEED LAUNCH OF TORONTO.

Correspondence

To Tour to Daytona Beach.

Editor THE AUTOMOBILE:

F. W. Mayhew and I expect to make a tour by pike to Daytona, Florida, in two automobiles. We expect to leave here on or about December 1, and if there is any one in this vicinity that has an automobile and wants to join, we would be pleased to have him with us.

Will you please advise us as to the best route by pike for this trip, or where we can get a good road map for this route.

William Vanderpool and I gave three days of exhibition races at the Hartford, Ky., fair October 1 to 3, and drove home by pike.

D. VANDERPOOL.

Springfield, O., Nov. 18.

Electrics Under the Weather.

Editor THE AUTOMOBILE:

I should like to ascertain, if possible, why electric automobiles refuse at times to run at their accustomed speed, work in a "logy" manner, etc., although the batteries are fully charged and no greater amount of amperes is being used than ordinarily. The next time the auto is operated it runs with its accustomed speed, has quick action and acts in an entirely different manner, although conditions are apparently the same. The battery had not been recharged; no parts brightened or cleaned; no oiling or anything done which might have changed previous conditions. Many owners of electrics have had the same experience. Can any one explain this apparent freakishness?

F. S. CARTER.

Burlington, N. J., Nov. 21.

Upholds the Rubber Tire.

Editor THE AUTOMOBILE:

In your issue of October 31, 1903, you published a letter from J. C. Higdon, M.E., about using steel tires for automobiles, especially for racing cars.

It would be a boon to everybody, excepting the rubber tire companies, if steel tires could be used on automobiles of every description, but in my opinion it is impracticable, for various reasons.

My own experience with tires covers 16,500 miles, running on asphalt, macadam, block and dirt roads, and naturally I have paid considerable attention to tires, noticing the wear and tear after each trip, and it is my belief that a solid rubber tire properly set could be used with safety on racing cars.

You published a report from France of tests held by a French manufacturer using pneumatic and solid tires on an automobile which was run on a macadam road, the result being that with pneumatic tires the car attained a speed of fifty miles

an hour, and with solid tires the car could make but thirty miles, because it racked the car from radiator to muffler, and if speeded higher, the chauffeur could not control it, as the front wheels would not keep the road well, bouncing and going from one side of the road to the other. I believe that if tests had been held on a track the car could have been run at much higher speed, but doubt that steel tires would prove as suitable.

I operate an automobile which was shod with 2 1-2 inch solid tires, and subsequently with 3-inch tires, one side being with a side-wire tire and the other with an internally fastened tire, both sets high grade. One was more resilient than the other; both would take up the unevenness of the road surface fairly well.

I know of an instance where 3-inch steel tires were tried on a delivery wagon weighing 3,000 pounds without success, and it was said that the steel tires were the cause of chains breaking and shafts bending, and also of putting out the operator inside of ten miles.

I trust pneumatic tires will be improved, so as to make them absolutely safe on racing cars and non-puncturable and easy riding on the road.

Will Mr. Higdon let us know how many miles an hour he could attain with his steel shod auto, and also the condition of the machinery after 4,000 miles' running?

Passaic, N. J., Nov. 20.

E. A. R.

Water Circulation.

Editor THE AUTOMOBILE:

Kindly explain to me the water circulation for a 10-hp. motor: that is, where the water is pumped from, and also if the tank should be higher than the motor, etc.

C. G. SIFFULEN.

Woodhaven, L. I., Nov. 17.

It is not essential, though it is often preferable, that the tank should be higher than the motor. The advantage is, that when a centrifugal pump is used, or some other variety such that the water can pass through it freely when the pump is at rest, the water will continue to circulate by gravity in case the pump should stop working. When pumps were driven by friction this advantage was more important than it is now that gears or chains are more commonly used. The preferable order of circulation is as follows: From the bottom of the tank downward to the pump, thence to the top of the radiator; from the bottom of the same to the bottom of the water jackets of the motor, and from the tops of the water jackets to the tank, a little below the top. The pump should always be below the bottom of the tank, and the piping from the motor to the tank should take off from the highest point of the water jacket, and pass, rising or, at all events without downward bends, to the tank, so as to give no chance for steam to collect in the pipe. If the tank is below the motor this cannot of course be

done, and the advantage of gravity circulation is sacrificed; but the pipe should always rise a little from the motor, so that the steam, if any forms, will not stay in the water jacket.

Action of the Differential.

Editor THE AUTOMOBILE:

When an automobile is turning a corner, is power applied to both of the rear wheels, or does the one having the smaller number of revolutions to make quit driving entirely? I believe that they both drive unless the turn is so sharp as to cause the inside wheel to stand still.

J. F. H.

Richmond, Va., Nov. 18.

In certain old forms of compensating gears, long since abandoned, the axle drove the wheels through ratchet clutches on the hubs. The axle could not turn faster than the slower of the wheels—i. e., the inside wheel on a curve; and the latter consequently did the driving, while the outside wheel merely overran the axle and received no power. The modern spur or bevel gear differential transmits the driving force alike to both wheels, regardless of their relative speed, any difference in speed being compensated for by the relative motion of the gears in the differential case. This, of course, assumes that the gears are in order and are not too stiff to work freely, as is sometimes the case with a new machine. If they should be so stiff as to lock, it would be difficult to turn a corner at all.

Trade Members Useful, Of Course.

Editor THE AUTOMOBILE:

In your issue of the 7th inst. I find an article headed "California Club Purges Directorate of Trade Members," which while entirely correct, might lead to the impression that there had been trouble with the trade members in the directorate of the Automobile Club of California.

Our club was incorporated about two years ago when the number of automobiles was quite limited and the new organization needed the assistance of the dealers. Several of them served as directors and the utmost harmony has always prevailed. But it has all along been understood that as soon as the club became sufficiently strong in numbers and influence, the dealers would retire from the directorate, which was done at the last annual meeting by unanimous consent. They still retain their membership in the club and we find them useful as well as agreeable associates.

F. A. HYDE,

Pres. Automobile Club of California.
San Francisco, Nov. 17.

Lieutenant E. P. O'Hern, U. S. A., has just made the trip from Jersey City to Washington, D. C., in the automobile artillery repair wagon illustrated and described in THE AUTOMOBILE for September 19, 1903.

CLIMBING RECORDS ON STONEHAM HILL REDUCED.

BOSTON, Nov. 21.—In the absence of races or contests of endurance, in which to try out the relative merits of their cars, the local automobilists are trying to satisfy their longing for active competition by breaking hill-climbing records. For this purpose the Commonwealth Avenue hill is generally selected, as it was at that place that the Massachusetts Automobile Club tests were held last spring. A few weeks ago, as recorded in *THE AUTOMOBILE*, W. E. Eldridge cut all previous records for gasoline cars with his four-

carried three passengers besides himself. The car was given a rolling start and ascended the hill on the high speed, it being unnecessary to make a change of gear. Two of the three timers caught the time as 33 4-5 seconds, and the third made it 33 3-5 seconds. The 33 4-5 was taken as official, which is about five seconds better than the previous record, and 18 seconds better than the touring car record of last spring. For the second dash at the hill, Mr. Phelps removed the tonneau and carried one passenger besides himself. The time was 29 seconds, several seconds under the record for a gasoline car with two passengers. For the final attempt to



PHELPS CLIMBS STONEHAM HILL IN THIRTY-THREE AND FOUR-FIFTHS SECONDS.

cylinder Toledo. Since that time, a number of owners and agents have been making tries at the hill with a view of bettering Mr. Eldridge's time.

The first automobilist to make an official attempt for a lower record was L. J. Phelps of Stoneham, who, this afternoon, made three ascents of the grade, each time making a new record. Mr. Phelps, it will be remembered, drove from Stoneham to the top of Mt. Washington last August, and established a record for the mountain climb which still stands. He also entered the New York-Pittsburg Endurance Run, but dropped out on account of the bad weather. The car which Mr. Phelps used to-day is one of his own make, of 15-hp., and is the same which was used in the Mt. Washington climb and in the Endurance Run. The conditions for the test were the same as when the club trials were made and the same men held the watches that have timed the previous contests.

On the first try at the grade, Mr. Phelps

break records, Mr. Phelps made a flying start without passengers and went up in 27 seconds, 4 seconds under Mr. Eldridge's time, and only 10 seconds slower than the steam carriage record.

Several prominent automobilists witnessed the trials and it is likely that if the weather continues good, there will be more climbing contests. Mr. Eldridge is not likely to stay beaten long as after his trials he said that he could do better. Mr. Phelps is satisfied but is confident that if necessary he could cut his marks still lower.

Masks of Transparent Horn.

An automobile mask of transparent horn has been brought out in France. It effectually protects the face of the wearer without hiding the features or making the wearer look hideous. Neither is there any danger from fire, as with celluloid. The mask has the usual spectacle glasses.

NEW METHODS IN METROPOLITAN RETAIL AND RENTING.

The Standard Automobile Company, New York, American agents for the Société Decauville of France, has purchased the Metropolitan storage and repair business of Smith & Mortensen, located on 39th Street, including their machine shop and tools, and the present repair shop of the Standard company will be moved from 38th Street to the larger quarters, which will be fully equipped for a general storage and repair business, including a rental department where cars may be engaged by the hour or day, together with the services of expert operators.

The salesrooms and offices of the Standard Automobile Company will be retained in the present quarters, which are now undergoing extensive changes and improvements. The lower floor will be fitted up elaborately as an exhibition-room where 10, 16 and 40-horsepower Decauville cars will be shown, as well as a complete line of high-powered launch motors, which are to be imported for next season's trade.

It is anticipated that the business of renting automobiles will be well patronized during the summer, and twelve cars will be kept on hand for this purpose. Although a number of these cars will be of Decauville manufacture, others will be included so that a patron may make his own selection. The cost of rental is at present \$5 an hour for a 10-horsepower car carrying five persons, and \$10 for higher-powered machines, including a chauffeur—and a brisk business is done at that. A schedule of special rates will be fixed for longer periods. The operators are held responsible for the condition of the vehicle they drive, and the company pays a bonus to the chauffeurs who take the best care of their machines.

The repair department in charge of Gilbert Combet, an expert French automobile mechanic who served his apprenticeship in the Panhard factory, and was afterward one of the head repairmen at the Panhard Works. Mr. Combet has been in this country four years. Until recently he conducted a repair shop in conjunction with the Central Automobile Company of New York, during which time some of the most elaborate and high-powered Panhards, Mors and Mercedes cars in the Metropolis were in his care. Mr. Combet will be assisted by a corps of expert French mechanics in the 39th Street establishment.

The Standard Automobile Company eventually intend to build launch motors alter designs by E. T. Birdsall, general manager of the company, but not in the immediate future. Mr. Birdsall sails for France on December 2, to attend the foreign automobile shows.

Automobile Housing and Insurance.

Muddled Situation in Regard to Insurance which Militates Against the Purchase of Automobiles in City and Suburb.

One of the first questions a man asks himself when considering the purchase of his first automobile is, "Where can I keep it?" If he lives in the city the chances are that he will find it most advisable and convenient to have it stored and cared for at some near-by garage, where the charge will be from \$15 to \$20 a month for steam and gasoline cars according to size, and \$35 and upward for the storage, care and charging of electrics. If, on the other hand, he lives in the suburban district, or occupies a detached house on a lot in the city and has a horse stable already on the premises, he is likely to prefer to keep the car in the stable, making alterations to accommodate the building to its new purpose, if he is the owner. But if there is no such structure on the lot, he will probably decide to erect a special automobile house or shed, either of lumber or a ready-made "portable" house of wood or of fireproof material.

In any case where it is decided to house the car on the premises, one of the considerations that it will be well to take into account is the matter of fire insurance, and the possible effect on the rate of premium on the stable and the dwelling with its contents.

INCREASED RATES ON PRIVATE STABLES.

Much inquiry upon this subject at the New York offices of the National Board of Fire Underwriters, the Fire Insurance Exchange, the New York Board of Fire Underwriters and of many of the leading fire insurance companies doing business all over the United States, develops the fact that there has been no concerted action in the matter among the companies and that there are no rules governing the rate question as affected by "exposure." The only rules that apply at all in suburban territory as well as in New York and other cities are those regarding extra rates to be charged on stables in which automobiles are kept, as fixed by the National Board of Fire Underwriters. The rules of the National Board are as follows:

Automobiles and similar vehicles propelled by the use of gasoline, naphtha or other volatile hydro-carbon oils. Privilege to keep may be granted as follows subject to the changes named:

Privilege to keep not exceeding one such vehicle in a private stable with warranty to keep gasoline and fill tanks in accordance with the requirements of the New York Board of Fire Underwriters—10 cents per \$100.

Privilege to keep not exceeding three such vehicles in a private stable or in a building not occupied for mercantile or manufacturing purposes, with warranty to keep gasoline and fill tanks in accordance with the requirements of the New York Board of Fire Underwriters—25 cents per \$100.

Each vehicle in excess of three, with warranty as above—5 cents additional, not exceeding a total charge of \$1 per \$100.

Privilege to house not exceeding one such vehicle in a building occupied for mercantile or manufacturing purposes, with warranty that no filling of tanks or storage of gasoline shall be allowed on the premises—25 cents per \$100.

The above charges are annual charges and must be increased on term policies in the same ratio as other term rates.

Privileges to house such vehicles with warranty that no filling of tanks or storage of gasoline other than what may be contained in the fuel tanks of the vehicles themselves, may be granted on policies covering in private stables or in buildings not occupied for mercantile or manufacturing purposes, at one-half the charges provided for above.

Privilege to keep automobiles in a livery stable is subject to charges required above "in a building not occupied for mercantile or manufacturing purposes."

AUTOMOBILE PERMIT OR "RIDER."

The so-called "rider," issued by the National Board to be attached to the policy giving permission to keep one or more automobiles in the stables or other building insured, was adopted in 1901 and reads as follows:

PERMIT FOR AUTOMOBILES USING GASOLINE.

In consideration of \$. . . additional premium, and the compliance by the assured with the hereinafter named warranty, permission is hereby given where not in violation of any law, statute or municipal restriction, to keep not more than (state number) automobiles using gasoline for fuel or power in the building described in this policy; it being a condition of this permit that this company is not liable for any loss or damage to an automobile, any of its parts or its contents insured under this policy caused by fire originating in the automobile itself.

It is warranted by the assured that the filling of the reservoir of an automobile, while the same is contained in the within-insured building, shall take place by daylight only; that no fire, blaze or artificial light shall be permitted in the room where and when the said reservoir is being filled; that no gasoline, except such as is contained in said reservoir or reservoirs, shall be kept within the said building, and that all excess of gasoline over that contained in the said reservoir or reservoirs shall be kept outside of, and at least . . . feet removed from, said building.

CAUTION.—The principal danger from gasoline devices is in having the gasoline about. At ordinary temperature gasoline continually gives off inflammable vapor, and a light some distance from the material will ignite it through the medium of this vapor. The vapor from one pint of gasoline will make 200 cubic feet of air explosive. It depends upon the proportion of air and vapor whether it becomes a burning gas or destructive explosion. Beware of any leaks in cans, and never forget how dangerous a material you are handling. It should be noted that laws and ordinances in some localities prohibit the use of gasoline for lighting purposes.

The term gasoline shall be held to include naphtha, benzine, or any of the light products of petroleum by whatever name known.

The gasoline kept outside of said building should, if possible, be underground and at least 30 feet from any insured property.

WARRANTIES OF NEW YORK STATE "RIDERS."

Under rule 12 of the regulations of the Underwriters' Association of New York State, whose jurisdiction embraces all territory in the Empire State outside of New York City, the fire insurance com-

panies may grant "permission to keep automobiles or other such vehicles using gasoline or similar fluids only upon the Association form and for an additional premium of not less than 50 cents per \$100 of insurance to be added to the annual rate, the same term and short rate rules that would apply to the rate for the policy upon which the permit is granted to apply also to the charge to permit." The form or permit rider of the New York State Board is similar to that of the National Board, as given above, except in the warranties, which are here given:

WARRANTED.—That no gasoline or other inflammable fluid of less than 110° flash test except that contained in the tanks or reservoirs in such automobiles shall be kept within any building insured (or containing property insured) by this policy.

That all of such fluid brought into the building shall be contained in an air-tight and entirely closed metallic can, free from leak.

That that portion of the building containing such automobiles shall be at all times well ventilated to the open air.

That no light, blaze, or fire of any kind shall be made or the fluid in any way ignited while any can or vessel containing such fluid is open in the room (or any room communicating) or within one hour after any tank or reservoir has been filled or such can or vessel opened and that no can or package containing such fluid shall be opened or the fluid handled while any fire, blaze, or artificial light (except approved incandescent electric light) is burning in the room or in any room communicating.

That no can, barrel or package from which such fluid has been emptied shall at any time be brought into any building insured (or containing property insured) by this policy.

If any of these warranties is in any way disregarded all insurance by this policy shall immediately cease and the policy become void.

REGULATIONS REGARDING GASOLINE.

Within the limits of Greater New York the owner of an automobile in which gasoline is used, must comply with the city regulations, adopted March 10, 1902, which require a permit or license "to keep or use," among other explosives and inflammables any gasoline or petroleum spirits, naphtha, benzine, or crude petroleum, and provide that "no permit will be issued for the storage or keeping for sale or use of gasoline or naphtha save in underground (buried in the ground) metal tanks, with no opening for drawing of contents below the level of the ground, but to be drawn from the top by pumps; said tanks must be provided with a ventilating pipe extending up as high as the roofs of the surrounding buildings, and no such tank capable of containing more than 100 gallons will be permitted within 100 feet of a tenement house."

Permits for the keeping of gasoline for sale or use in motor vehicles will be issued at an annual fee of \$5.

By the requirements of the New York Board of Fire Underwriters all places where gasoline using automobiles are housed must be well ventilated; the gasoline, other than that in the machines, must be kept in storage tanks or in safety cans placed in drip pans at least three inches in depth and kept in a substantial made closet in unexposed location; where

more than ten gallons of gasoline are required, it must be placed in a tank in an approved ventilated stone or brick vault, or in a pit outside of the building, the opening to which must be closed by a fire-proof door or cover, secured by a lock; the tank shall have a vent-pipe carried ten feet above the level of the street and the gasoline must be pumped from the tank into a safety can from which the tanks of the automobile must be filled; and all empty barrels must be removed from the premises.

A special commission appointed by Mayor Low to revise the city regulations regarding the storage and use of gasoline met representatives of the automobilists last week to draft new rules.

THE QUESTION OF EXPOSURE.

The rules of the National and New York State Boards fixing extra rates to be charged on private stables in which automobiles are housed, as given above, apply only to the stables (evidently stables erected for horses and carriages) or other buildings in which private automobiles are kept, and in no wise affect the rate of insurance on any dwelling and contents that may be on the same premises. The customary premium rates on stables on Manhattan Island, and in all other adjacent territory covered by the New York Fire Insurance Exchange (which does not embrace the whole of Greater New York nor any suburban territory) are 20 cents per \$100 on private detached brick or stone stables and 32 cents per \$100 on private detached frame stables.

Very few of the insurance companies have had to deal with the problem of extra rating on a dwelling and contents because of the erection of a private automobile stable in close proximity. "It is safe to say," said one insurance man, "that three-fourths of the companies have not had to deal at all with the automobile hazard. So there has been no concerted action, and no rules have been adopted by any gov-

(Continued on page 576).

Kilometer Trials at Dourdan and Gaillon.

When the kilometer trials at Dourdan in France were resumed, on November 5, after two postponements, weather and surface conditions were finally favorable, and remarkable speed records were made. The vehicles entered in the touring car section were obliged to run in full touring trim and consequently made no speed comparable to that of the racing machines. All the cars classified as "large" and "light" in the summary given herewith were equipped

the road under orders from the local prefect to stop the course in case of disobedience. The races were run with a flying start of nearly one thousand yards. The performance of the Gobron-Brillié car was a world's record, and four of the motor bicycles lowered the previous record for their class.

Gaillon Hill Speed Contest.

While the one-kilometer trials which have now been held for five successive years at Gaillon are regarded as the standard tests of hill-climbing capacity in Europe, the steady increase in motor power that has been noted in the racing annals of the past two years—coupled with weight reduction, at that—has virtually transformed these tests into pure trials of speed, marked by figures only slightly behind the records for level ground.

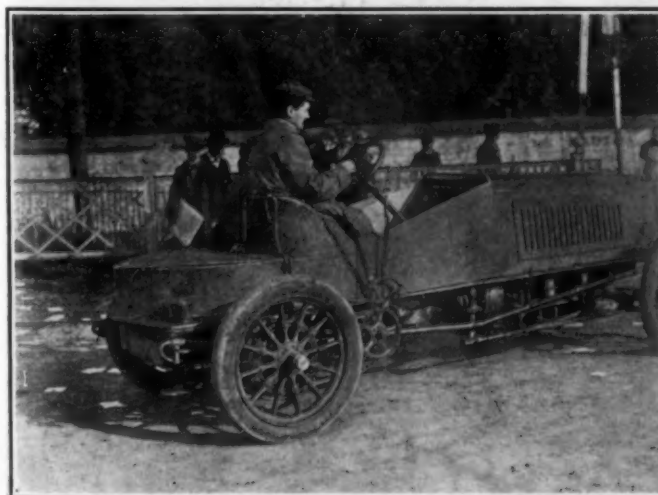
As briefly mentioned last week, the sentiment of the Gaillon tests on November 8 was marred by two ugly accidents, one of which craved the life of Mr. Danjean, who had piloted his Richard-Brazier car to victory in its class at the Dourdan meet three days previously. From the reports now at hand it is seen that both accidents occurred on the morning before the tests were begun, and that both were due to the efforts of the drivers to avoid running into other vehicles observed too late on account of a dense fog.

Fifty-seven cars, out of an entry list of eighty-six, took part in the trials, and a crowd of several thousand spectators witnessed the event in which Rigolly, on a Gobron-Brillié of 110-hp., won the highest honors, followed by Duray as second in a car of the same make. The touring cars carried their full weight as at Dourdan, and the start for all was a flying one of about 500 yards. In the following are given the flying start kilometer records made at Dourdan and the most important



DANJEAN IN RICHARD-BRAZIER CAR.

with four-cylinder motors, and among the "voiturettes" only two had a two-cylinder equipment. The classification was by cylinder volume for the racers and by selling price of the chassis for the tourist class. The speed of the motor bicycles ranged between that of the "light cars" and that of the "voiturettes." Spectators were strictly required to keep entirely off



RIGOLLY IN GOBRON-BRILLIÉ, 100-110 HP.



PELZER IN GARDNER-SERFOLLET, 15 HP.

of the records on the hill at Gaillon which are also for one kilometer, but over a grade averaging about 7 per cent.:

RACERS AT DOURDAN.

Make.	Driver.	Time.	Speed per hour
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Large Cars.

		m. s.	kils.	miles
1 Gobron-Brillié	Duray . . .	26 2-5	136.36	84.73
2 Gardner-Serpollet	Le Blon . .	27 3-5	130.43	81.04
3 Mors	Jeandré . .	29 3-5	121.62	75.57
4 Noé-Boyer	H. Loste . .	36 1-5	99.44	61.79

Light Cars.

1 Richard-Brazier	Danjan . .	30 4-5	116.88	72.62
2 Richard-Brazier	Brazier . .	31 3-5	113.92	70.79
3 Bayard (Clément)	Hanriot . .	32 1-5	111.80	69.47
4 Richard-Brazier	Gosselin . .	32 2-5	111.11	69.04
5 Darracq	Baras . . .	34 1-5	105.26	65.40
6 Decauville	Touloubre	39	92.30	57.35

Voiturettes.

1 Darracq	Wagner . .	34 4-5	103.44	64.27
2 Passy-Thellier . .	Tavenaux .	36 1-5	99.44	61.79
3 Richard-Brazier	Combier . .	37 3-5	95.74	59.49
3 Richard-Brazier	Bariller . .	37 3-5	95.74	59.49
5 De Boisse	De Boisse .	41 1-5	87.37	54.28

Motor Bicycles.

1 Griffon	Lamberjack . .	34 1-5	105.26	65.40
2 Griffon	Demester . .	35 1-5	102.27	63.55
2 Peugeot	Lanfranchi .	35 1-5	102.27	63.55
4 Werner	Bucquet . .	35 3-5	101.12	62.83
5 Werner	Fossier . . .	36 2-5	98.89	61.45
5 Peugeot	Momo	36 2-5	98.89	61.45

TOURIST CARS AT DOURDAN.

Make.	Driver	Time.	Speed per hour.
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Chassis, 18,000 to 25,000 Francs.

		m. s.	kils.	miles
1 Automotrice . . .	Dime	1 9 4-5	51.57	32.04
2 Automotrice . . .	Mrs. Gaste .	1 16 4-5	46.87	29.12

Chassis, 8,000 to 12,000 Francs.

1 Gardner-Serpollet	Pelzer . . .	40	90	55.92
2 Noé-Boyer	Nielsen . .	56 1-5	64.05	39.80
3 C.G.V.	Edwards . .	59	61.01	37.91
4 Gladiator	Tranchant .	1 6 1-5	54.38	33.79
5 Tony-Huber	Marnier . .	1 9 4-5	51.57	32.04

Chassis, less than 4,000 Francs.

1 P. Roy	P. Roy . . .	1 26 2-5	41.66	25.89
2 Noé-Boyer	Gachet . . .	1 35 2-5	37.73	23.44

GAILLON RECORDS FOR TOURING CARS.

November 8, 1903.

Chassis costing from 8,000 to 12,000 francs:

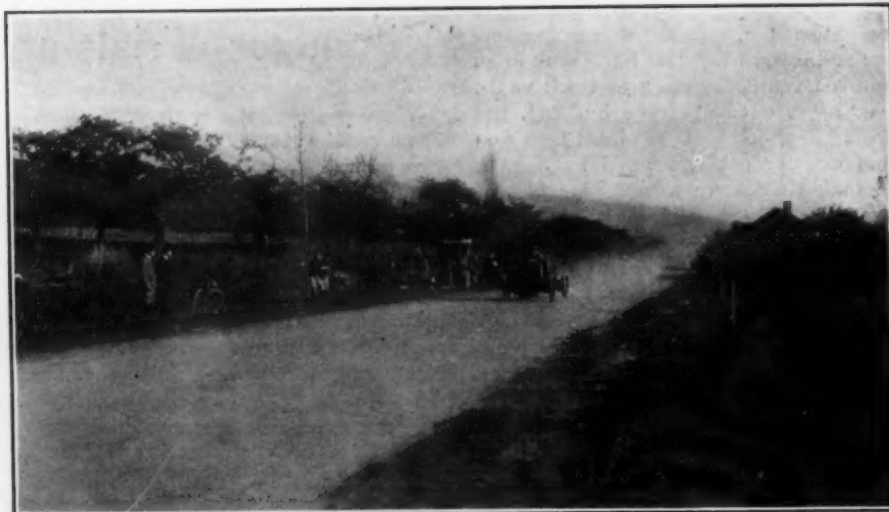
1. Gardner-Serpollet, 15-hp., Pelzer, driver 1m., 2 3-5 sec.
2. Noé-Boyer, Axel Nielson, driver, 1m., 48 1-5 sec.

Chassis costing from 18,000 to 25,000 francs:

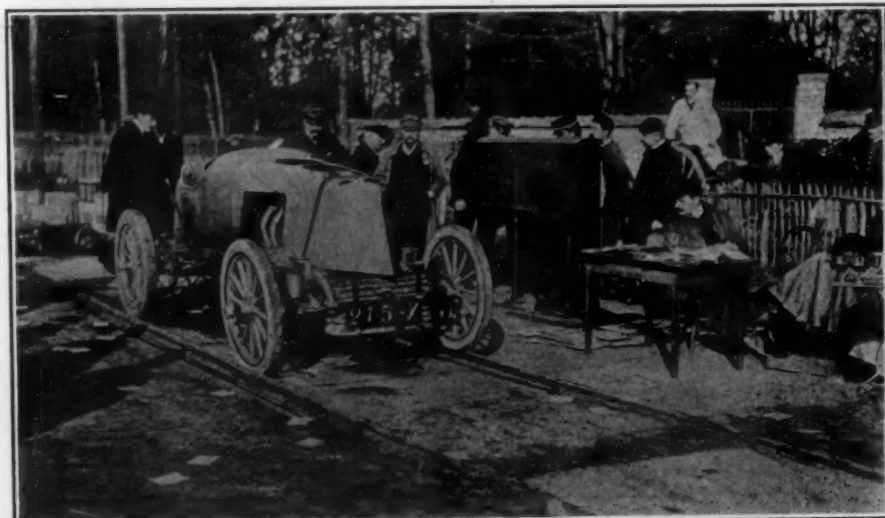
1. Richard-Brazier, De La Rochette, driver, 1m., 36 2-5 sec.
2. Automotrice, 20-hp., Mrs. Gaste, driver, 1m., 57 3-5 sec.

Chassis costing more than 25,000 francs:

1. Panhard et Levassor, 60-hp., Heath, driver, 49 4-5 sec.



GOBRON-BRILLIE CAR IN 'GAILLON HILL TEST.



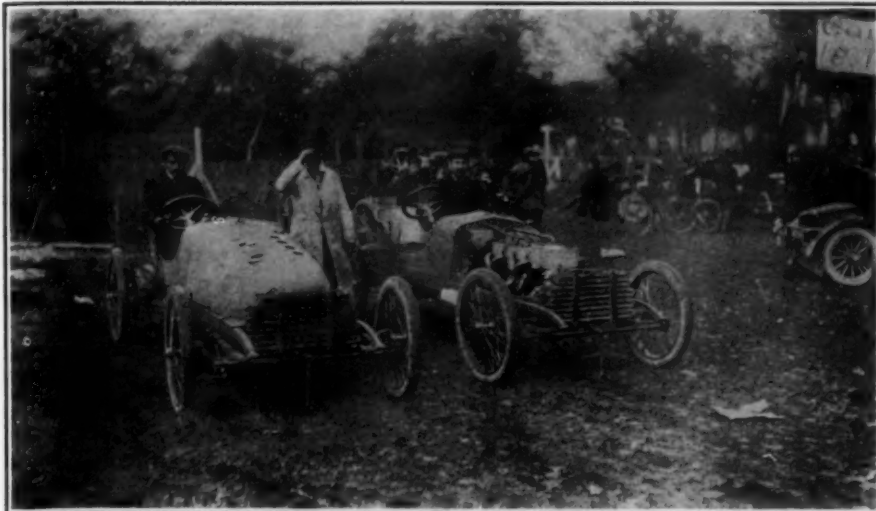
AUGIERES IN MORS CAR ON THE SCALES.



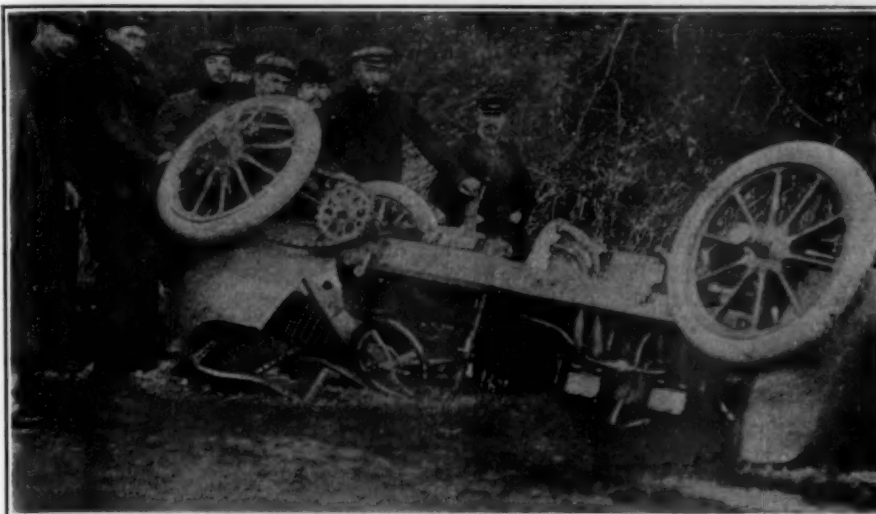
FAURE IN PANHARD ET LEVASSOR RACER.

2. Mors, 60-hp., Count Strogonoff, driver, 56 1-5 sec.
3. De Dietrich, 45-hp., De Bron, driver, 1m., 22 sec.

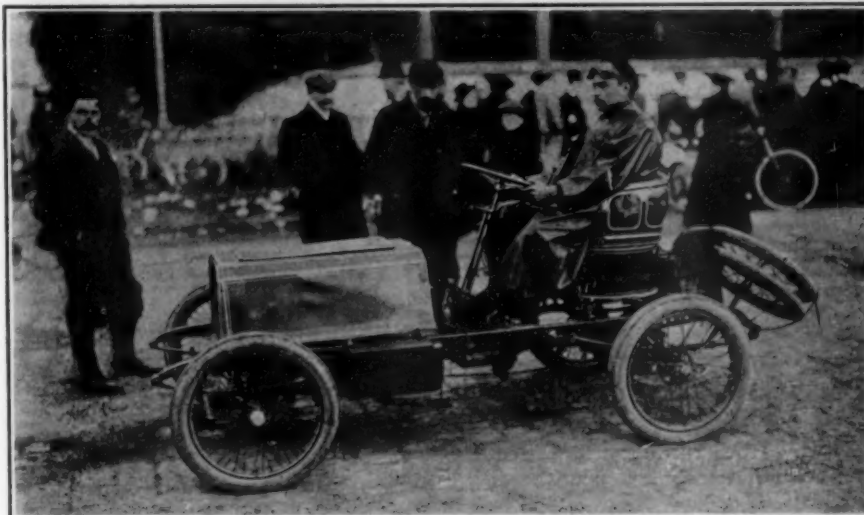
A De Dietrich omnibus, carrying 10 persons, made the ascent in 3 m., 15 2-5 sec. Motor bicycles of cylinder volume up to one-fourth litre were classed among tour-



TWO NEW BAYARD (CLEMENT) LIGHT RACERS.



IMMEDIATELY AFTER DANJEAN'S FATAL PLUNGE.



WAGNER IN DARRACQ VOITURETTE.

ing vehicles. Momo, on a Peugeot of this description, made the climb in 1m., 20 4-5.

In the following are given the records achieved with the racing cars on the same occasion:

Large cars:

1. Gobron-Brillié, alcohol fuel, Rigolly, driver, 33 3-5 sec.
2. Gobron-Brillié, alcohol fuel, Duray, driver, 35 1-5 sec.

3. Gardner-Serpollet, steam, Pelzer, driver, 36 4-5 sec.
4. Gardner-Serpollet, steam, Le Blon, driver, 38 1-5 sec.
5. Mors, Jeandre, driver, 41 sec.
6. Mors, Augieres, driver, 43 4-5 sec.
7. Panhard et Levassor, P. Faure, driver, 43 4-5 sec.

The previous record for large cars on the Gaillon hill was held by Le Blon in a Gardner-Serpollet, 36 sec.

Light cars:

1. Bayard (formerly Clément), Hanriot, driver, 38 sec.
2. Darracq, Osmont, driver, 43 sec.
3. Darracq, Beconnais, driver, 48 1-5 sec.
4. Decauville, De la Touloubre, driver, 49 1-5 sec.

Former record for light cars was 40 4-5 sec., held by Rutishauser with a Gardner-Serpollet.

Voiturettes:

1. Darracq, Wagner, driver, 40 sec.
2. Passy-Thellier, Tavenant, driver, 58 1-5 seconds.

Former record for voiturettes was 47 sec., held by Thellier with a Passy-Thellier car.

Motor Bicycles:

1. Griffon, weight, 47 kilos, Demester up, 41 sec.
2. Carreau, weight, 48 kilos, Carreau up, 41 sec.
3. Griffon, weight 48 kilos, Lamberjack up, 42 3-5 sec.
4. Peugeot, weight 48 kilos, Collomb up, 46 4-5 sec.
5. Werner, weight, 45 kilos, Bucquet up, 47 1-5 sec.
7. Peugeot, weight, 45 kilos, Momo up, 51 sec.

Sixth place was made by Lamberjack with another Griffon machine and eight other motor bicycles ranged up to 2 m, 3 sec. for the kilometer hill climb, for which the previous record was held by Lamberjack on a Griffon in 49 4-5 sec.

The Automobile Club of Great Britain and Ireland has proposed to Alfred Harmsworth, donor of the Harmsworth International Motor Boat Cup, that although the last date for the receipt of challenges for the year of 1904 as fixed in the deed of gift has already passed without any challenge having been made to the English club, the rules be changed so as to allow of entries being received up to February 1, so that a race can take place next year. Under the conditions made in the deed of gift, the British club which now holds the cup, is entitled to retain it for next year.

An automobile club is being organized in Nashville, Tenn. One of its first acts will be to consider the automobile ordinance pending in the local council, which, though satisfactory to motorists in its present form, "will bear watching."

THE AUTOMOBILE

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SATURDAY, NOVEMBER 28, 1903.

IS BROWNLOW'S BILL MODERN?

With the Brownlow Bill again before Congress and an appropriation of twenty-four million dollars asked for from the United States Treasury as an aid to road-building in 1904, several questions arise which have never before been sharply before the public. It has been abundantly demonstrated that all roads which are not paved or asphalted create an amount of dust under all forms of traffic, and especially under rapidly moving automobiles, that the world at large is in no mood to tolerate much longer, although it has endured it in the past. Whether now the United States Government ought to expend large sums of money, and encourage States and communities to spend twice as much, without taking this dust problem—already grown so serious—into careful consideration, must seem very problematic to any one who does not only want results from the Good Roads agitation, but is also anxious that such results should be acceptable and creditable in this progressive age. To devote the great wealth and energy of this country, at this belated hour to the production of dusty roads of a construction approved a hundred years ago, while the rest of the world vociferously demands something better and especially insists that the dust nuisance must be

abated, economically if possible, but otherwise at any cost, would hardly be consistent with the position assumed by the United States on the subject of progressive methods in matters affecting the material welfare of the people. Here as nowhere else has it been admitted that material progress in the comforts of living is the key to everything higher. In the large cities the means for combating disease-laden dust are intelligently discussed and adopted. Within twenty years, when farmers will use automobiles as freely as they use horses, the cry for dustless roads will doubtless reverberate from ocean to ocean. Should not those to whose votes the Brownlow Bill will be entrusted take cognizance of the moral certainty that such will be the case, and do what is in their power to have the roads that may be built with national aid answer the needs of the population for some time to come? At this particular juncture when the experiments made with tarring of roads, in Europe and here, promise to solve the dust and mud problem, moreover cheapen materially the construction and maintenance of macadamized roads, a "rider" on the Brownlow Bill providing at least for investigation of this method by a commission appointed by the Government, would seem to be in order. Naturally such a commission would extend its research to all other modern methods used here and abroad, and, whatever would be the result of its labor, there would afterwards be no cause for regrets for having spent millions in following antiquated traditions in road building without consulting in regard to the requirements of this day and age.

Speaking about what is antique in the road-building art, it is perhaps worth remembering that the Romans probably at one stage of their civilization had advanced to a thorough realization of the dust evil which is now the curse of most Italian roads. The Appian Way, still in fairly good repair after 2,000 years of use, is a paved road for its entire length, and although the traffic over it was undoubtedly considerable, this expensive but dustless construction is probably better explained by the comfort it afforded the patricians who traveled to and from the bathing resorts over it, than by purely economical considerations.

WHY RACING THRIVES.

It is a conundrum to many worthy persons why the "racing game" in connection with automobilism flourishes as well as it does. "There is nothing in it," they will say, "except a great deal of needless expense; it is not even amusing. What sensible person cares to see mere machines striving for place on the track? It is merely a question of power and gearing. It is just as easy to make a powerful and speedy machine as a slow one; easier indeed, if the slow one is required to be

comfortable. And as for the daring of the chauffeur, he had much better show this quality as a fireman or a soldier where he may serve some useful purpose. Why, every thinking person understands to-day that the center of gravity in the automobile movement lies in the business vehicle. That's where the money is; that's where the future lies." Somewhat in this strain it is asserted every day that automobile racing is of no consequence. We venture to offer a reason to explain why racing thrives nevertheless. It is not Carlyle's misanthropic explanation of all phenomena that did not agree with his fancy: that the world is peopled with 1,400 millions of human beings—mostly fools. It is, on the other hand, not those reasons, either, which have been advanced for years, to the effect that it is needful to drive 80 miles per hour in order to find out what material and dimensions are suitable for 25 miles per hour. The reason submitted to our readers takes the form of a paradox, namely, that "it is better to do twenty things wrong than one thing right." In all its seeming perversity this rule is really observed by all living creatures and in the inanimate world as well. Nature creates and recreates without regard to blunders, but with ceaseless activity until finally, out of a thousand failures, one success is produced. Mankind does the same. Out of a thousand alleged inventions four or five prove worth the while, but the activity goes on. The individual who sits and broods, fearful of taking action till he shall have everything planned out correctly is quickly outdistanced by his hustling brother who, endowed with a modicum of good sense, insists on doing something all the time. He may blunder, but he seldom blunders wholly and irretrievably, and, what is still more to the point, he frequently blunders into some excellent line of action, whereupon his native good sense tells him that this is the one to be followed up.

Racing presents this field for ceaseless activity in automobile work. Its aims are easily within the comprehension of hundreds who would not have the patience or ability to do active plodding work in any line of automobile endeavor where results would be measured by an uncompromisingly economical foot-rule. Racing enlists the energy of all these. They burn the midnight oil to devise means for reducing a speed record two-fifths of a second and incidentally they are set to work on more important, though perhaps to them minor, problems. They do twenty things wrong, but seldom wholly wrong; and there is a horde of them, so something of value results in the aggregate. In no other department of automobilism is there an opportunity for inducing so many persons to ceaseless celebration and continual pottering with the problems of construction and operation. Every little thing counts in racing, and it is undoubtedly true that some of the best constructors

would have been lost to the industry if racing had not made it possible to lead their energies, step by step, to more important and comprehensive work.

In the "racing game" innovations are tried out. In the construction room where plans are made for the "business vehicle," they are generally reasoned out of existence by the conservative engineer who is mortally afraid of doing anything that might be criticised as unmechanical and "wrong." And through this fear which leads to inaction, he is tripped into committing the one unpardonable wrong—to let the world wait.

Why should not the opportunity afforded by the coming Florida beach races be utilized to give the new "scientific" system of handicapping a thorough test on a straightaway course? Empirical handicapping—always provided that the records of all the machines be known—will give a close finish; but if handicap races are ever to show anything as to the relative merits of the contestants a scientific system is the only thing possible, and the only way to develop such a system is to keep using it. Even though the scientific system has been used but twice, the results on its second trial were sufficiently striking. It may be doubted if the most expert committee, confronted with the problem of handicapping a dozen machines, the previous performances of half of which were unknown, could have guessed the speed of each within three or four seconds to the mile; and nearly all the calculated allowances in the Brighton Handicap came closer than this. Any handicapping system must be based primarily on the straightaway speeds of the machines, and allowances made for the particular track. And where will there be a better straightaway course than that in Florida?

The point is made by an Ohio paper that a horse, when near many other horses, as in a city, will not notice an automobile, whereas, if it were alone in the country it might act very differently. This can hardly apply to country horses, which in a city would be frightened by many other things; and most city horses need little training for any new class of objects. The simple fact, however, is that the horse is by nature an unreliable beast, likely at any time to "go crazy" with or without reason. Witness the frequent runaways even in cities.

An enterprising and progressive druggist has fitted up an automobile as a traveling drug store, shelves having been provided to hold bottles of the drugs in most demand. The owner expects to sell principally to druggists. His automobile cost \$2,500 and is stocked with \$1,500 worth of medicines.

NEW CHAIRMEN OF COMMITTEES IN THE A. C. A.

Chairmen of the new committees of the Automobile Club of America for the ensuing year have been appointed by W. E. Scarritt, the newly elected President, as follows: Goods Roads Committee, Albert R. Shattuck; Racing Committee, O. W. Bright; Law, John P. Dill; House, Capt. Homer W. Hedge; Membership, H. R. Winthrop. A new committee on maps has been created and Cortlandt F. Bishop appointed chairman. Reappointments of committee chairmen have been made as follows: Contest, John A. Hill; Technical, Dr. S. S. Wheeler; Foreign Relations, Clarence Gray Dinsmore; Exhibition, Gen. George M. Smith; Library, A. R. Shattuck; City Roads, Jefferson Seligman. Secretary Butler has written for a copy of the proposal of the German Automobile Club that the members of the national clubs be permitted to select professional drivers for their cars in the Gordon-Bennett race.

Autos Numerous at Football Game.

While Robert W. Goelet of Newport and friends were passing through Boston last week in Mr. Goelet's big touring car, on their way from Newport to Cambridge to attend the Harvard-Yale football game, a somewhat peculiar accident occurred. Just as the car wheeled into Commonwealth Avenue from Massachusetts Avenue, a bicyclist named William Anderson of Cambridge was coming up Commonwealth Avenue. The automobile and bicycle collided and the bicyclist was thrown headlong through the window of the touring car. He was badly cut and had to be taken to the hospital. Mr. Goelet continued to Cambridge.

Mr. Goelet's car was only one of hundreds that brought people to Cambridge for the football game. It is doubtful if so many automobiles were ever assembled at one place in New England before. One or two parties came in from New York, and several Yale students drove over the road. Most of the local automobilists also preferred to trust to their speedy vehicles rather than to the electric cars. From the appearance of the streets a stranger might have thought an automobile race meeting was in progress.

Smith Convoles New York Clubs.

A call for a meeting of the directors of the New York State Association of Automobile Clubs, to be held on Saturday, November 28, has been issued by President H. W. Smith, of Syracuse. The purpose of the meeting is to effect permanent organization of the association and the adoption of a policy to secure legislation more favorable to automobilists. W. H. Hotchkiss is mentioned for the presidency, Mr. Smith having stated that he would not be a candidate. The directors, elected one from each State, are as follows: Automobile Club of America, Emerson Brooks;

Long Island Automobile Club, A. R. Pardington; Albany, C. M. Page; Utica, A. J. Baechle; Syracuse, F. H. Elliott; Auburn, S. C. Tallman; Rochester, Harry S. Woodworth; Buffalo, William H. Hotchkiss.

New Hampshire Club Formed.

The New Hampshire Automobile Club has been organized by automobilists of Exeter, N. H., and vicinity, and articles of incorporation have been filed with the Secretary of State. The officers are: President, Reginald C. Stevenson; vice-president, Arthur H. Sawyer; treasurer, William M. Jenkins; secretary, Charles G. Sheldon, all of Exeter. These, with Mr. Powers of Somerville, constitute the executive committee. It is the object of the club to extend its influence and membership all over the State.

OLDFIELD SUGGESTS D-SHAPED TRACK FOR THE COAST.

SAN FRANCISCO, Nov. 18.—Several wealthy men here talked with Barney Oldfield when he was here for the recent races, about the possibility of building an automobile racetrack in the neighborhood of San Francisco. Oldfield suggested a D-shaped track, his idea being to get rid of two of the curves of the oval track. He said that on the straight stretches there is comparatively no risk, but that when the machine strikes a turn at full speed, it glides from thirty to sixty feet. If the slightest part of the mechanism were to break, instantaneous death might result. Oldfield suggested that the grandstand should be on the straight part of the D so that the spectators would see the fastest part of the race. The track there should be eighty feet wide and at the turns it should have a width of 125 feet, which would give ample room for three machines to speed around at the same time. Oldfield says that he could make a mile in fifty seconds on such a track, which would draw drivers and cars from all parts of the world.

World's Mile Record Now 55 Seconds.

Last Friday Barney Oldfield cut his own world's record of a mile in 55 4-5 seconds on an oval track down to 55 seconds flat at Los Angeles, Cal. His new record was made in a speed trial at the race meet held by the Automobile Club of Southern California at Agricultural Park.

The Monmouth Automobile Club, of Asbury Park, N. J., has started an agitation in favor of the construction of a good stone road from Matawan to Red Bank, to form a connecting link thirteen miles long in a system of good roads from New York to Asbury Park. This improved road, together with a new bridge over the Raritan River, from Perth Amboy to South Amboy, will shorten the route to the Jersey shore resorts by 18 or 20 miles.

Housing and Insurance.

(Continued from Page 571.)

erning board that apply to such cases. It is a question for each company to decide for itself, and the opinions of the different companies differ considerably."

The question is in general one of "exposure," and in New York City the question is hardly taken into account in rating dwellings except in special cases where the dwellings are adjoined by specially hazardous risks, as a paint and oil store or a mattress factory. Within the fire limits of New York (boundaries fixed by law within which no wooden structures are allowed to be erected), the dwellings are almost universally built in solid rows with no space between them. But they are all of brick and stone and have "fire walls" between, without any openings, and these are considered as safe against the communication of fire as an open space of twenty-five feet or more.

In the city, therefore, the owner of an automobile can store his machine in his brick barn or even in a portable fireproof automobile shed without increasing the insurance rate on his dwelling, provided the stable does not adjoin and communicate with the house. The rate on the barn, however, will be increased in accordance with the rules providing for automobile permits, and the city rules regarding the storage and use of gasoline must be observed.

AN "APPROVED" CONSTRUCTION.

An interesting case that throws some light upon this came up recently before the New York Board of Fire Underwriters. The owner of an automobile living in Brooklyn borough wanted to make a storage room for his machine in a twelve-foot passage way between his frame house and an adjacent brick building, the passage to be roofed over and closed at the ends. The city authorities gave permission to store the vehicle in the space provided the side of the frame house was sheathed with iron plate and the roof of the shed was made of metal. But Inspector Sims, of the Underwriters' Board, upon inspection of the premises, refused to pass the risk unless the weather-boarding was removed from the side of the house, the spaces between the uprights filled with brick to the lathing and a second course of brick built up outside of the studs. In addition the covering of the enclosed space must be of metal and provided with a central ventilator, the gasoline tank buried outside of the shed, the door of the improvised stable kept locked and the gasoline pump, which was to be carried inside of the shed, must be fastened so that children could not play with it. Under these conditions the Board gave its approval and so far as is known, the premium rate on the house was not raised.

On the other hand, if a stable is attached to and communicates with the dwelling,

the dwelling takes the same rate as the stable, and if an automobile is kept in the stable the rate on both the stable and house is increased as provided in the rules.

A number of the big modern apartment houses in New York have been constructed with a room in the basement especially provided for the housing of automobiles, owned by tenants, but these are not approved by the Underwriters' Board, and, although the Insurance Exchange does the rating for the city, it would be likely to place a special high rate on such a building if automobiles are kept in it.

SAFETY DEVICES.

It is explained by the board that the risk with gasoline is in the careless handling of it and in the ease with which a disgruntled chauffeur might cause a fire to damage his employer's property without leaving any means of proving his connection with it. All possible security is obtained, however, by following the recommendations and requirements of the board and of the City Department of Combustibles. One of the first of these is that the gasoline supply be kept in a metal tank of 3-8-inch plates buried two feet under ground and outside of the building—preferably as far from it as possible, up to fifty feet. There should be no connection with this tank except a pipe for filling it from the barrel, a pump for drawing the gasoline from it, and a ventilating pipe carried up from it to the height of the tops of the surrounding buildings. If the pump from the tank is carried inside of the auto barn, it should have a drip pan placed under the nozzle to catch the drippings, and this pan should be kept emptied so that the volatile fluid will not commingle with the air and form a combustible gas. Another device recommended is a safety can, made in five gallon sizes, to be used for filling the tank in the automobile. These cans are substantially made, and have a cover that can be locked down. Inside is a false top, having a funnel provided with a spring valve through which the can is filled from the tank pump. The can has a pump with a movable nozzle and a valve through which the fluid is pumped into the reservoir in the car. At no time is the gasoline exposed to the air when this safety can and the buried tank are used.

Automobile owners who will want to keep their cars housed on their premises live in the suburban districts as a rule, and it is there that the matter of "exposure" is of importance, since many dwellings and stables are of frame construction and their proximity to each other creates a certain hazard. But there are no specific rules regarding exposure in the territory around New York and each individual company fixes its own rate in any special case. Thus, one large company doing business in Brooklyn, the manager of whose suburban insurance department is prejudiced against automobiles in general, would be inclined

to raise the rate on the dwelling and its contents if an automobile were stabled within fifty feet of the house and if the buried gasoline tank were nearer than 100 feet.

Another equally strong company, more liberally inclined, would consider fifty feet a safe distance for the stable and a distance of thirty feet from any building a safe distance for the buried tank. Anything closer would be apt to affect the house if it were in a location where there was not good "protection"—that is, a paid fire department and good city water supply. Where the protection is good, policies have been written on houses without any increase of rate where the automobile stable was only twenty-five or thirty feet away. One brick house was "written" in New Jersey without increase of rate where the auto stable was only ten feet away.

A third large company gave the following "minimum" distances: In protected district, twenty-five feet from frame house; in protected territory, frame stable seventy-five feet from frame house, and buried tank 100 feet; unprotected territory, house of stone or brick and stable same or of frame construction, twenty to twenty-five feet, and tank sixty feet.

CLASSIFICATION OF AUTO BARN.

An interesting point arises as to the classification of portable automobile houses and of small private barns built of a size just large enough to comfortably house one vehicle. One insurance company says it would class such as "outbuildings," which include tool houses, small storage-sheds not used for commercial purposes, and also fences. Such structures, when of brick or stone, take a rate in the city of 20 cents on \$100, and the contents 26 cents on \$100. A frame or brick-filled outhouse takes a rate of 32 cents. In the case of an automobile, the machine would take the "floating" insurance rate, which varies with different companies but in general is 30 to 40 cents on \$100.

The city building inspection department also would class such auto sheds as outbuildings. The nearness to each other of outbuildings, or their closeness to a fence, would not affect the rate upon them, and the fact that a fence extends from the auto house to the dwelling would not affect the rate on the dwelling, as the fire department can easily put out any flames on the fence before they reach the house.

In any case the only safe policy for a man to pursue who wishes to keep his automobile on his premises, whether in the city, in the suburbs or in a country town, is to see his insurance agent and get his advice. It is never safe to increase the hazard or run the chance of doing so without notifying the company or its agent, as failure to do so may cast suspicion upon the holder of the policy in event of fire. Every policy clearly requires such notification. Another excel-

lent plan to follow is, when erecting a stable for gasoline or steam vehicles, to locate it as far as the limit of the premises will permit from the dwelling and other buildings, and to keep the gasoline in an underground tank as far from all buildings as possible up to a distance of seventy-five feet.

Blanket "Floater" Insurance Rate.

An automobile "floater" insurance policy is now issued by a Buffalo firm, Messrs. Smith & Wilcox, at the rate of 3 per cent. per annum. It insures against fire "wherever the auto may be in the United States or Canada," against marine perils in American and Canadian waters and against railroad transportation risks in the same territory.

Considering that the fire risk varies greatly according to type and construction of automobiles, motorists may evidently look forward to the time in a near future when the blanket rate of 3 per cent. will be very materially reduced for all automobiles with which the fire hazard is remote. If 3 per cent. covers the risk for any automobile, they will reason, much less should cover it for a car with short and well-laid pipes and thoroughly insulated electric wires.

Standard Chain Guarantee Adopted.

The American manufacturers of chains for bicycles, motorcycles and automobiles have adopted the following form of guarantee for their products:

"We will replace such chains as in our judgment show defects in workmanship or material, provided same are returned to us for inspection, transportation charges prepaid.

"We agree to prepay return transportation charges to consignor on all replacements.

"On account of the various conditions under which chains are used and cared for, we cannot guarantee the certain performance of any chain, and will not replace chains or parts which have been used. Customers should inspect chains as soon as received, and report any supposed defects or complaints before returning same."

Harlan W. Whipple and Harry S. Harkness are both reported to be having powerful racing cars built with a view to competing for places on the American team for the Gordon-Bennett. Mr. Whipple's car is being built in Baltimore and is to be 80 horsepower, while Mr. Harkness is said to have perfected plans for a 100-horsepower car. Both men expect to compete in the Florida coast races in February.

Governor Yuan-Shi-Kai of China, has imported nine automobiles for the use of the Dowager Empress. They will be operated between Pekin and the Summer Palace.

Plans for Boston Show in March.

BOSTON, Nov. 25.—At a meeting of the Boston Automobile Dealers' Association Monday evening, preliminary plans for the show to be held next March in Symphony Hall were submitted by the committee in charge, made up of W. E. Eldridge, chairman; George H. Lowe, and Harry Fosdick. The committee has made a canvass of the trade and finds that there is a general inclination among the makers and agents to aid in making the Boston show of 1904 one of the best on record.

No space has yet been allotted, as applications are to be acted on Wednesday. There are to be thirty-seven spaces on the floor and some may be subdivided. It is likely that local dealers will have at least two-thirds of the space, and the other third will go to outsiders, although the local trade has changed so much during the year that it may require much more space than it did last year. Several agents have applied for admission to the association in anticipation of the show.

Prospectus of Detroit Show.

Prospectuses of the Third Annual Automobile and Sportsmen's Show, to be held in the Light Guard Armory, Detroit, from February 15 to 20 inclusive, are being distributed by the Tri-State Automobile and Sporting Goods Association. These embrace a plan of the floor spaces, a brief history of the previous exhibitions with list of exhibitors at the 1903 show, a letter stating the purposes of the association and application blank.

Next year's show is to be vastly improved over that of last February by the benching of the dogs in the drill hall in the basement, where their yelping and barking will not annoy the exhibitors and spectators on the main floor. The management has mailed its prospectuses on the same day to all expected exhibitors and allotments of spaces will be made in the order in which applications are received.

The armory will be placed at the disposal of exhibitors Saturday morning, February 13, and their displays are to be in position by Sunday night.

There were thirty-five exhibitors of automobiles and automobile goods at the 1903 show, in addition to many exhibits by the leading manufacturers of fire-arms and other sporting goods.

Planning Big Buffalo Show.

BUFFALO, Nov. 23.—Arrangements are already being made for the second annual Buffalo Automobile and Sportsman Show, to be held in Convention Hall from March 6 to 12, inclusive. The management plans to have a much larger show than the last one and every inch of floor space in the large hall will be required.

W. C. Jaynes, secretary and treasurer of the affair, states that from the correspondence already received, he believes the entire space at the show will be taken by January 1, if not before. Several of the largest French automobile manufacturers expect to get space at the Buffalo show for their exhibits, which they will bring over for the St. Louis Exposition.

Several applications for admission to membership in the Importers' Branch of the Association of Licensed Automobile Manufacturers have been considered at important meetings of the four importers who were recently taken into the association. At a meeting held last Monday there were two applications to consider from dealers in Rochet-Schneider cars. One was from Alexander Fischer, who has sold these machines here during the last two years, and the other from the Automobile Importing Company, members of which showed credentials from the foreign manufacturers making them direct representatives. The Importers' Branch decided to wait until Mr. Fischer, who sails for France on Saturday, returns home.



PLANT OF THE EISENHUTH AND GRAHAM-FOX COMBINATION.

The Eisenhuth Horseless Vehicle Company of Middletown, Conn., has purchased the goodwill and patents of the Graham-Fox Motor Company of New York, whose 16 and 35-hp. machine, equipped with a compound gasoline engine, was described in a recent issue of THE AUTOMOBILE, and

will manufacture this car at its large factory acquired from the Keating Company. In addition to automobiles, the Eisenhuth Company announces that it will build motorcycles and launches. The plant is situated on the Connecticut River and an illustration of it is presented herewith.

News and Trade Miscellany.

The Great Western Cycle & Auto Company, Minneapolis, Minn., has removed from its former location to 612 First Avenue, to accommodate the increase in business.

Announcements have been issued for the opening on December 1 of the American branch of Panhard & Levassor, at 230 and 232 West 13th Street, New York, for the sale of Panhard automobiles and motor boats. The branch will be prepared to make all repairs and to supply spare parts. A. Massenat is general manager and A. de Maguin, assistant manager.

Los Angeles dealers have sold so far this season over 400 automobiles, and state that there are fully 800 automobiles in use in Southern California. There are two automobile manufacturers in Los Angeles and another ready to start.

P. H. Pelkey & Co. of Winfield, Kans., builders of grain elevators in Southern Kansas and Oklahoma, have leased a large store-room under the Wellington Hotel in Wichita, and will open up an automobile garage. The automobile business will be a side line only, as Messrs. Pelkey & Co. have other large business interests.

C. W. Brown, Winnipeg agent for the Michigan automobiles made at Kalamazoo, Mich., made a run of eighty miles from Winnipeg to Stony Mountain, Stonewall and Balmoral in between five and six hours' running time in a Michigan runabout. The nine miles from Stonewall to Balmoral over a splendid road was covered in twenty-five minutes.

F. E. Avery of Columbus, O., has commenced work on an addition to his garage on East Franklin Street. The building will be of pressed brick, two stories high, 60 x 85 feet, and fireproof. The new building will be used for storage, warehouse and offices, while the present building will be fitted up as a machine shop and repair department, making the establishment the largest and most complete garage in the city.

C. S. Hinshaw, of Boston, returned home last week from a four-days' visit to the factory of the E. R. Thomas Motor Company, in Buffalo, where he saw the new model three-cylinder Thomas car for 1904 tested out with four persons aboard, on a fifty-mile run, on which miles were reeled off in 1 1-2 minutes and thirty miles were covered in the hour over rough roads. Hinshaw, whose temporary address is 147 Columbus Avenue, Boston, expects to have an exclusive Thomas branch store, repair shop and storage station in Boston before the new year.

Rumors to the effect that the Rushmore Dynamo Works of Plainfield, N. J., do not make the lenses used in the Rushmore searchlights, are denied by that concern, which states that it not only makes the lenses but has done so for ten years and has for the past eight years had the largest lens plant in the country and sold a large number of the smaller lenses to other makers.

The New Jersey Motor Car Company has broken ground for its new building at 291-293 Halsey Street, Newark, N. J., and it is expected that the building will be ready for occupancy early in February. The store is to be of brick, one story high and with 126 feet frontage and a depth of 185 feet. When completed the company expects its new home to be the most modern salesroom and garage in the State.

The Pence Automobile Company, Minneapolis, Minn., has broken ground for a new four-story building at 717-719 Hennepin Avenue, and the entire building, save a portion of the second floor, which will be set aside for club rooms for the Minneapolis Automobile Club, will be devoted exclusively to the company's wholesale and retail automobile business. A finely equipped machine shop will be made a feature of the establishment.

Among the new agents with whom the Winton has been placed for the coming season are the following: B. A. Robinson, Worcester, Mass.; H. J. Koller, Newark, N. J.; Quincy Automobile Company, Quincy, Ill.; E. P. Moriarty, Kansas City, Mo.; Utah Automobile Company, Salt Lake City; DeWitt Veeder, Schenectady, N. Y.; W. J. Peters, Daytona, Fla.; Davis Automobile Company, Providence, R. I.; Ben Halliday, Portland, Ore., and George W. Blackmore, Painesville, O.

The Georges Richard-Brasier cars ordered for the New York exhibit, will form a comprehensive display of at least seven cars ranging from the 7 1-2 horsepower two-cylinder tonneau to the 50-horsepower four-cylinder car. The 20-horsepower four-cylinder machine is constructed especially for American roads with a ten-inch ground clearance and standard tread. Some of the cars will be provided with side-door tonneaus and all will have Rothschild bodies.

An automobile was sold in just five minutes at the Oldsmobile agency on West 38th Street, New York, one day last week. A gentleman entered, asked for a second-hand Olds runabout, looked at one, asked the price, handed the money to the salesman, jumped in and drove out. He said that he must be home in time for supper, and that was about all that was said in the five minutes.

The Banker Brothers Company has closed for the Pierce agency for 1904 and will take one-half of the output of the factory of the George N. Pierce Company of Buffalo. The Banker Brothers Company has also practically concluded arrangements for handling the Peerless again in 1904 for New York.

Anthony's Fire & Accident Notification Agency, a company that makes a business of notifying people of fires and accidents, and taking them to the scene of trouble, has purchased two Cadillac automobiles from the Cleveland Automobile & Supply Company. The cars are fitted with tonneaus and can cover the ground much faster than a horse-drawn wagon, besides carrying more people and being more economical to operate.

The Peerless car owned by D. S. Dodge, of Phelps & Dodge, has travelled 7,200 miles this season over the roads of Vermont, New Hampshire, Massachusetts, Rhode Island, Connecticut and New York States and has cost the owner nothing for repairs, according to Frank Fuller, the chauffeur, who has been constantly on the go for seven months and has yet to meet with his first accident, having been out for a record in this respect as well as in the care of the car.

The Electric Vehicle Equipment Company, Philadelphia, Pa., manufacturer of tractor trucks and electric vehicles, will discontinue its garage at 210-214 North Broad Street in that city, on November 30 and devote its entire attention to the manufacture of commercial vehicles and trucks at the factory at Twentieth Street and Montgomery Avenue. The Broad Street premises have been sublet to E. H. Godshalk, who will continue the automobile business there under the name of the Keystone Motor Car Company, with whom the Electric Vehicle Equipment Company has no connection.

Sales Manager McCrea, of the Royal Motor Car Company, formerly the Hoffman Automobile & Mfg. Co., of Cleveland, is on an extended trip touching Buffalo, Pittsburg, Philadelphia, New York, Boston and other eastern cities. He is surveying the situation with regard to the probable demand for next season and incidentally making contracts with several leading agents. The new Royal car is equipped with a two-cylinder motor suspended vertically in front and the drive is by flexible shaft and bevel gears. The details of the car have not yet been fully decided upon. The first model has been in operation on the road for about two weeks and has been put through some hard road runs with a view to bringing out any weak points. Last week the car made a fast run to Erie, Pa., and return, 200 miles, and last Sunday it was taken to Wellington and return, 100 miles, in less than four hours elapsed time.